



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Environmental Management and Sustainability Program Innovation Initiative

**Environmental Management System Project
Report to the Legislature:
Interim Final Report and Seventh Quarterly Update
October 1999 - May 2001**

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California Environmental Protection Agency

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EXECUTIVE SUMMARY

This report provides the Legislature an interim summary, and seventh quarterly update, on the Cal/EPA Environmental Management System (EMS) Project authorized by Assembly Bill 1102 (Stats. 1999, Ch. 65), codified in Public Resources Code, Section 71045 et seq. The findings, conclusions, and recommendation presented herein are based on analysis of data provided to date by participating pilot organizations, and on extensive dialogue with stakeholders in advisory group sessions, workshops, and informal meetings. A Quarterly update will be provided to the Legislature for October 1, 2001 with the final report due January 1, 2002. Additional update data will be collected, analyzed, and vetted through the stakeholder working groups to support the final report analyses, conclusions, and recommendations. While the project is not complete, there is sufficient information to support the interim conclusions and recommendations described.

Seven pilot projects, comprised of agriculture, manufacturing, computer components, defense, metal plating, beverage industries and municipal sewerage facilities and representing various stages of EMS implementation, were established for the purpose of evaluating whether and how the use of an EMS;

- increases public health and environmental protection and
- provides better public information than existing regulatory requirements.

The overall conclusion from these pilot studies is that implementation of a well-designed EMS results in substantial improvements in both environmental performance and the quality and quantity of information available to the public as compared to that resulting from existing legal requirements.

Findings

The results from the EMS pilot projects are comprised of both quantitative data on environmental performance changes as well as qualitative information on changes to the quality and quantity of information available to the public, and information about aspects of management systems that result in public health and environmental protection. Tabular summaries of the quantitative results are given in the following section. A more complete description of the qualitative information can be found in the body of the report.

Performance Improvements

Broad and significant performance improvements were found in those organizations with developed EMSs. Improvements ranging from a 33% reduction in a regulated pollutant emission to the complete elimination of a regulated emission were seen. Reductions were greatest in those areas where significant environmental impacts were identified in the EMS process, and for which aggressive targets were set. Very significant performance improvements were also seen in areas not covered by existing

standards and regulations. These included energy use, solid waste reduction, and fresh water use. Three of the seven pilots have not yet reported EMS based improvements because full implementation has not yet occurred.

Information Improvements

Substantial increases in both the quantity and quality of information available to the public, beyond that required by law, were seen in all projects, including those that had not completed the EMS design and deployment process. This information included comprehensive assessments of environmental aspects, impacts, performance targets, management strategies, and performance data relative to targets. Community, local government, public interest group representatives, as well as Cal/EPA found this information of great value.

Role of Cal/EPA in Pilot Projects

The role of Cal/EPA (the State) in the pilot projects varied considerably with different projects. In projects where an EMS pre-existed the pilot project, the role of the state was to observe and document process and performance, communicate this information to interested stakeholders, and to facilitate communication between stakeholders and pilot facilities. In these pilots, the State and the community had a modest influence on the EMS design and implementation, however participation by the State substantively increased the information exchange between the pilot and the community.

In projects where the EMS was developed within the project, an expanded State role included the initial decision to implement an EMS, as well as training, guidance, and provision for community participation in the EMS design process. In these pilots, the State and the community had significant influence on the design of the EMS. The presence of the State in the process greatly enhanced communication between the pilot and the community.

Conclusions

EMSs are effective tools to manage the environmental aspects of a wide variety of organizations and their use can result in significant performance improvements. EMSs can also increase both the quantity and quality of information available to the public beyond that required by law. The State can play a valuable supportive role with small and medium sized business in the design and implementation of a high performance EMS. The State can play a valuable role with organizations of all sizes, influencing the design and deployment of an EMS to address the environmental and public health issues of interest to the broader community. Performance targets, particularly aggressive targets, are critically important in promoting performance. Environmental quality is largely a regional issue, therefore performance enhancements from a regionally implemented EMS have the potential for even greater benefit.

PERFORMANCE RESULTS [Sec. 71045(a)(3)]

Pilot Project	Environmental Aspects - Targets and Objectives	Environmental Benefits	Regulatory Requirements		Non-Regulated
			Meets	Goes Beyond	
Anheuser-Busch, Incorporated	Solid Waste	98.3% recycle rate of wastes and by-products			√
		Reduced costs for: energy, waste disposal, water and wastewater, materials purchases, insurance and workers compensation claims.			√
Artistic Plating	Perchloroethylene Nitric acid Wastewater: <ul style="list-style-type: none"> • Chrome • Cyanide • Liquid chlorine 	Eliminated PERC Reduced by 62% Reduced by 50% Reduced by 50% Reduced by 50% <i>No wastewater discharge violations after 1997 baseline thru 2000 update.</i>		√ √ √ √ √	
IBM	Energy use Employee transportation Solid waste	Reduced 4% per year EcoPass used by 24% of site employees (an increase of 52%) Reduced 73%			√ √ √
Lockheed Martin Aeronautics Company - Palmdale	Reduce Ozone Depleting Compounds Reduce emissions of Volatile Organic Compounds (VOCs) Reduce Hazardous Waste generation Reduce TRI Chemicals	Eliminated Reduced by 80% Reduced by 91% Reduced by 91% <i>No environmental compliance violations since 1998.</i>		√ √ √ √	
San Diego Metropolitan Wastewater Department, Operation and Maintenance Division	Reduce chemicals inventories Reduce energy use Reduce solid waste Reduce potable water use	Reduced by 33% Reduced by 5% Reduced by 23% Reduced by 36%		√	 √ √ √

EMS in Progress	Environmental Aspects Selected for development of targets and objectives	Anticipated Environmental Benefits	Regulatory Requirements		Non-regulated
			Meets	Goes Beyond	
Vineyards and Wineries					
<ul style="list-style-type: none"> Davis Bynum 	Energy and fuel use Water use Hazardous materials use Production materials use Storm water	Reduced energy and fuel use Reduced water use Reduced materials use or identification of less hazardous substitutes Reduced materials use and reduced solid waste generation Reduced erosion and sedimentation		 √ √	√ √ √
<ul style="list-style-type: none"> Benziger Family Winery 	Storm water Energy and fuel use Water use Production materials use Hazardous materials use	Reduced erosion and sedimentation Reduced energy and fuel use Reduced ground water extraction Reduced materials use and solid waste generation Reduced materials use or identification of less hazardous substitutes		√ √	 √ √ √
Central Marin Sanitation Agency (CMSA)	Air emissions Energy use Water use Chemical and waste management	Reduced odors, reduced pollutants from employee commuting and co-generation Reduced energy use, increased equipment efficiency Conservation of potable water Improved efficiency and better compliance with regulations	 √		√ √ √ √
Pentel	Solvent use/disposal Wastewater sludge disposal/ treatment filter Oil/water discharge Oil-soaked absorbent Heavy metals in plastics Scrap plastic/product Fuel and energy use Paper/packaging use	Reduced solvent usage Reduced wastewater treatment sludge/filters Reduced oil discharge Reduced usage Eliminated Reduced disposal Reduced usage Reduced usage/disposal		√ √ √ √	 √ √ √ √

INFORMATION RESULTS [sec. 71045(a)(4)]

Company	Policy Statement	Env. Aspects	Env. Impacts	Objectives and Targets	Operations and Procedures	Compliance Information	Haz. Waste data	Air Emissions data	Water Discharge data	Resource Use data	Solid Waste data
Anheuser-Busch, Inc. ¹	√	√	√	√		√	√		√	√	√
Artistic Plating ²	√	√	√	√	√	√	√	√	√	√	√
Central Marin San. Agency ²	√	√	√	√ Draft	Under development	√	√	√	√	√	√
Lockheed Martin Aero ¹	√		√	√		√	√	√			√
IBM ¹	√		√	√		√	√	√	√	√	√
Pentel ³	√	√	√	√		√	Under development	Under development	Under development	Under development	Under development
San Diego Metro. Wastewater Dept. O & M ¹	√	√	√	√	√	√	√	√	√	√	√
Vineyards and Wineries ²	√	√	√	Under development	Under development						

¹ Anheuser-Busch, Inc., Lockheed Martin Aeronautics Company, IBM, and San Diego Metropolitan Wastewater Department have completed their EMSs. Information is provided to the public in a variety of ways. Examples include web sites, annual reports, through public relations departments, newsletters and Cal/EPA established working groups.

² Artistic Plating, Central Marin Sanitation Agency (CMSA), the Vineyards and Wineries Project: Benziger Family Winery and Davis Bynum Winery have shared EMS information with Cal/EPA and the Working Groups. Artistic Plating, CMSA, and the Vineyard and Wineries Project and are currently developing their EMSs.

³Pentel has shared EMS information with Cal/EPA and will be sharing information at the Southern California Working Group meeting at the Pentel facility on May 17, 2001. Pentel's EMS is also in development.

CONCLUSIONS

The conclusions presented below are derived from the quantitative findings presented in tabular form above and the qualitative findings presented in the main body of the report. Conclusion presented in this report focus primarily on those issues raised by AB 1102 (Public Resources Code, Section 71045 et seq.) As knowledge on additional issues was gained, either from the pilot projects or the extensive stakeholder discussions, some conclusions beyond the scope of AB 1102 are presented.

1. Where data was available, compliance with existing regulatory standards increased significantly for those organizations implementing an EMS
2. All organizations with established EMSs demonstrated environmental performance significantly beyond that required by any “permit, requirement, authorization, standard, certification, or other approval issued by a federal, state, regional, or local agency” (legal requirement). Performance beyond legal requirements was demonstrated in several specific areas regulated by law. Such performance is attributable, at least in part, to the development and implementation of the EMS, and not to the applicable legal requirement.
3. Significant performance improvements were demonstrated in environmental areas for which there are no legal requirement. Such areas include energy consumption, solid waste generation, and fresh water use. These performance improvements represent significant potential for environmental benefit and they are not driven by legal requirements.
4. Compliance and general environmental performance improvements can be directly related to two principal factors:
 - a. Design and implementation of a comprehensive, integrated management system of policies, pollution prevention, training, assessment, and continual improvement.
 - b. The establishment of clear, measurable objectives to drive performance.
5. Information quantity and quality available to the public increased substantially both as a result of EMS development and implementation. This result can be attributed to existence of information about the broad range of environmental impacts and resource use, management strategies and performance measures that only existed because there was an EMS. This information, which is noted in the Information Results above, was not shared with the public as a result of any legal requirement. Community stakeholders have indicated that this supplemental information is of high value.
6. Management systems developed without external input from government, community representatives, and other stakeholders tend to be focused on compliance management and internal business needs. Management systems

developed and deployed with participation of government and other external stakeholders have a much greater focus on general environmental performance in addition to compliance. Performance objectives can be significantly influenced by government and other external stakeholders. As a result, participation by government and external stakeholders results in an EMS with greater community and public value.

7. Working partnerships between government, communities, and business do not develop spontaneously, but must be promoted, nurtured, and supported with training, facilitation, and in some cases, financial support.
8. Companies enter into working partnerships with government and communities for a variety of reasons. Such reasons include:
 - a. Business benefits which accrue from good, positive community relations.
 - b. An avoidance of costly, often legal, confrontation with government and communities that result from either poor management or poor communication.
 - c. Recognition by several companies in the pilot group of the importance of the business' social contract with the community to future economic success.
 - d. A vision that at some future time, there will be refinements to the environmental regulatory system with the objective of making that system more efficient and effective in achieving desired environmental outcomes. Also, the recognition that building good relationships with communities and government will afford these companies with a better opportunity to influence such refinements, if or when they occur.
9. Reasons that did NOT motivate companies to join pilot projects.
 - a. Expectation of regulatory concessions, either in standards of performance or quality of information reported.
 - b. Expectation of reduced oversight by regulatory agencies.
 - c. Expectation that regulatory agencies would not increase oversight of companies as a result of their participation in the pilot projects.
10. Larger, more technically sophisticated firms, with greater financial resources, can develop EMSs without government and/or community support, however as stated above, such internally developed EMSs have less focus on the broader environmental, public health, community, and regional issues. Firms with more limited technical and financial resources may require significant assistance in the form of training, consultation, and direction in the development and deployment of an EMS that benefits the public.
11. Government best functions as a convener, facilitator, and leader of communities and business in the promotion of environmental excellence goals and practice.

RECOMMENDATIONS

The learning from California projects, as well as from other states and countries, establishes the importance of setting specific and measurable goals and targets for environmental improvement. Statewide, regional or business sector goals and targets can help align the efforts of individual companies, regional partnerships and government agencies to achieve significant environmental improvements. As a result:

- **It is recommended that further demonstration (pilot) projects be established with individual companies, in business sectors with substantial environmental impact, to develop EMSs which include specific, measurable targets for environmental performance which goes significantly beyond legal requirements and current performance.**
- **It is recommended that Cal/EPA identify business sectors or regions with significant environmental impact, with whom partnerships can be formed to improve environmental performance through the integrated application of EMSs, pollution prevention, multi-media inspection, enforcement and recognition.**
- **It is recommended that a broad outreach and dialogue be initiated, to engage the opinion leaders and the public as to what California's long-term environmental sustainability and resource conservation goals should be.**

If the regulatory system is to be optimized for performance and improved environmental outcomes, the permit system, as the central element of the system, must be evaluated for enhancement. If enhanced environmental outcomes are the primary objective of the regulatory system, and if integrated cross-media management of the environment produces better outcomes, then the permit system should reflect this. Such a system will require legislation, however work should be initiated to determine the basic characteristics of such a system, which would inform the legislative development process. This enhanced permit system would likely function within a supplemental regulatory track for entities which have demonstrated the willingness and ability to implement robust management systems which have achieved superior results.

- **It is recommended that a project be initiated, with broad legislative, stakeholder and public input, to design and test a truly multi-media, systems based, outcome-focused permit system.**

Cal/EPA will have difficulty being seen as a leader in cross-media, systems management, and enhanced environmental performance, unless it implements such an approach internally.

- **It is recommended that Cal/EPA set a goal to become a truly green government agency through the design and implementation of a Cal/EPA EMS, which sets aggressive performance targets in significant environmental and resource conservation areas.**

Recognition of environmental performance excellence is valued by businesses, as public recognition for green production can add value to product (e.g. wines produced from organically grown grapes).

- **It is recommended that a systematic process to evaluate and recognize truly excellent environmental and resource conserving companies and government agencies be established.**

Introduction

This report provides the Legislature an interim summary, and seventh quarterly update, on the Cal/EPA Environmental Management System (EMS) Project authorized by Assembly Bill 1102 (Stats. 1999, Ch. 65), codified in Public Resources Code, Section 71045 et seq. The findings, conclusions, and recommendation presented herein are based on analysis of data provided to date by participating pilot organizations, and on extensive dialogue with stakeholders in advisory group sessions, workshops, and informal meetings. A quarterly update will be provided to the Legislature for October 1, 2001 with the final report due January 1, 2002. Additional update data will be collected, analyzed, and vetted through the stakeholder working groups to support the final report analyses, conclusions, and recommendations. While the project is not complete, there is sufficient information to support the interim conclusions and recommendations described.

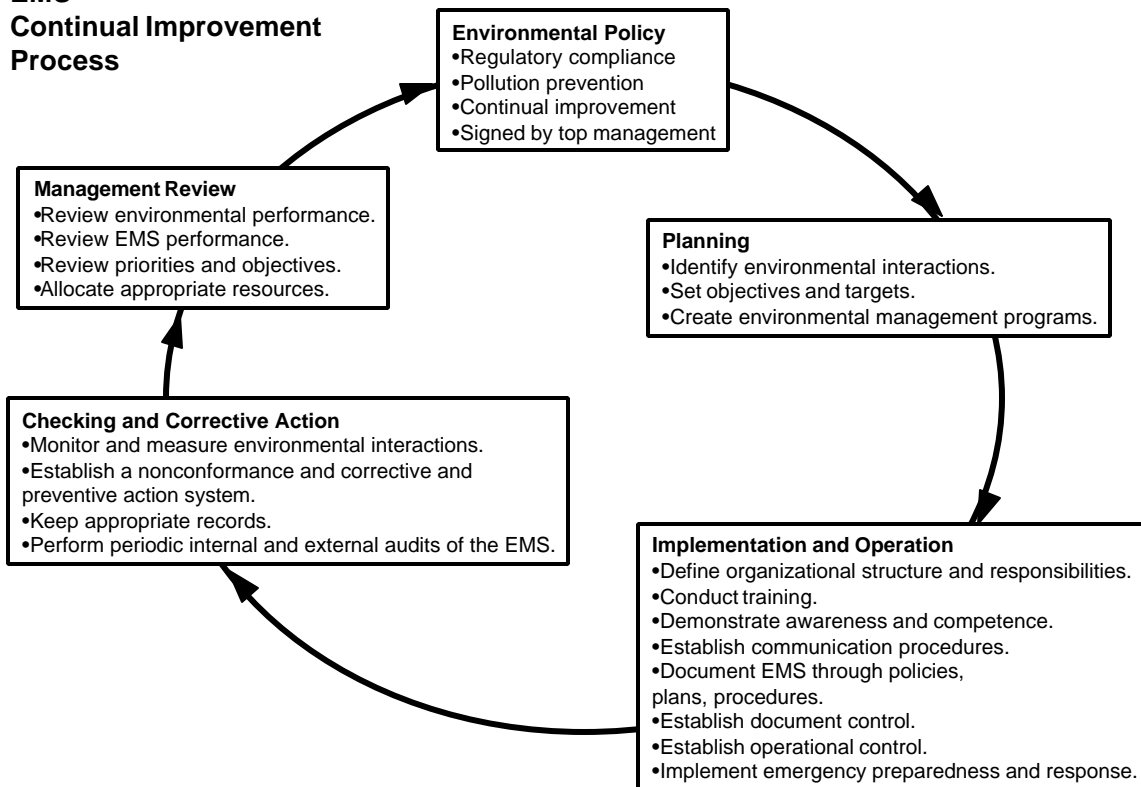
Environmental Management System Definition

An environmental management system is a management process designed to help an organization achieve and demonstrate improved environmental performance. It is a process by which an organization's management identifies regulated and unregulated environmental aspects and impacts of its operations, assesses current performance, including compliance, and develops targets and plans to achieve both significant and incremental environmental improvements. Environmental aspects are human or industrial activities, products, or services that can interact with the environment. Environmental aspects are evaluated as to whether they can cause significant environmental impacts or changes.

An EMS integrates environmental management into the organization's overall management system by identifying the policies, environmental targets, measurements, authority structures and resources necessary to produce both regulatory compliance as well as environmental performance "beyond compliance." A continual improvement cycle is established through this process, as shown in the figure on the next page.

There are several models for EMSs; however, ISO 14001 is a voluntary, global standard for environmental management systems governed by the International Organization for Standardization, a non-governmental international organization based in Geneva, Switzerland. In the United States, organizations can elect to be certified (registered) to the ISO 14001 Standard by an independent auditor registered by the American National Standards Institute Registration Accreditation Board (ANSI RAB).

EMS Continual Improvement Process



Context

During the next 40 years, California's population is expected to grow by 25 million, in addition to the current 34 million people. This burgeoning population will increase pressures on our ecosystems and on the built environment, threatening the quality of life for all Californians. We already experience these pressures as we approach local limits in the ability of our environment to support the standard of living we enjoy. Acute pressures include energy and water availability, air and water contamination, endangered species, loss of habitat, declining biodiversity, loss of farm land and open space, solid and hazardous waste generation, transportation, housing availability, and many others. State and federal environmental laws and regulations currently regulate some of these pressures. Others are addressed through local laws, such as zoning. Still others are outside the regulatory arena.

Tremendous progress in environmental protection has been made through our media-specific laws and regulations. However, our ability to build on this success and move toward a sustainable society of 60 million people is limited because of the complex multi-media problems we face and the difficulty in designing appropriate responses solely within the current regulatory framework.

During the last 30 years, the first generation of environmental laws and regulations emphasized protection of human health and has led to dramatic improvements in air and water quality and in waste management. We are now seeing the emergence of a second-generation environmental management strategy that builds upon the first; one that uses a variety of tools to systematically address both regulated and unregulated environmental and resource issues; one with a strong foundation in current law and regulation and a floor of compliance; one that is built on long term improvement targets and cooperative agreements to achieve beyond compliance environmental results by those organizations willing and able to do so--ultimately leading to environmental sustainability.

Recognizing the need for an evolving environmental management strategy, representatives of several states met in 1996 to discuss common interests in EMS. It became clear that many states, with both Democratic and Republican administrations, were keenly interested in EMS developments. These states decided to conduct pilot programs to understand the relevancy and value to regulatory programs. From these initial discussions, the Multi-State Working Group on Environmental Management Systems (MSWG) developed. The MSWG, chaired by California, now lists all 50 states, four federal agencies, and a substantial number of businesses, public interest groups, and academic institutions as participating or observing members. An open process, involving quarterly meetings and annual workshops, has been established which has strong involvement of public interest groups. More than sixty organizations are participating as pilot projects in the United States. A national database has been established to support ongoing research on the performance of EMSs.

Description of the authority and project objectives established by the California State Legislature is provided below.

Legislative Authority and Project Objectives

Public Resources Code, Section 71045 et seq. (Assembly Bill 1102) required the Secretary to

- consult with the Boards, Offices, and Departments within Cal/EPA, other interested state, regional, and local agencies, and any other interested party in proposing pilot projects,
- hold at least one public hearing for the purposes of obtaining public comment on the proposed pilot projects,
- establish no more than 8 pilot projects, and
- submit quarterly reports to the Governor and the Legislature on the status of the pilot projects.

The bill (see Appendices for complete text) authorized the Secretary to

- develop evaluation and monitoring parameters for the evaluation of pilot projects and to
- develop a model memorandum of understanding to be entered into by the Secretary and any regulated entity that agrees to participate in a pilot project.

Seven pilot projects were established for the purpose of evaluating both of the following:

1. Whether and how the use of an EMS by a regulated entity that participates in a pilot project increases public health and environmental protection over those protections provided through the issuance, enforcement, and monitoring of any permit, requirement, authorization, standard, certification, or other approval issued by a federal, state, regional, or local agency for the protection of public health or the environment.
2. Whether and how the use of an EMS by a regulated entity that participates in a pilot project provides the public with greater information on the nature and extent of the public health or environmental effects of activities or processes engaged in by the regulated entity than that information provided through the issuance, enforcement, and monitoring of any permit, requirement, authorization, standard, certification, or other approval issued to the regulated entity by a federal, state, regional, or local agency for the protection of public health or the environment, or any other law or regulation governing the disclosure of public information.

The Cal/EPA EMS Project is designed to inform public policy makers and engage stakeholders in determining whether and how the use of an EMS:

1. increases public health and environmental protection and
2. provides better public information than existing regulatory requirements.

Cal/EPA requested public comment on the proposed seven pilots during May 1, 2000 through June 1, 2000. Two public hearings were held; one on May 22, 2000 in Southern California, and one on May 24 2000 in Northern California, and conducted in accordance with Division 34, Section 71045 et seq., of the California Public Resources Code as a forum for public comment. Receiving one procedural comment, Cal/EPA announced selection of the pilot projects as proposed and adopted the pilot selection criteria, model pilot project work plan, and evaluation and monitoring parameters.

Partnerships between community members, environmental organizations, businesses, government agencies and academia are a major element of the EMS Project, implemented through the creation of two regional stakeholder working groups, participation in the Multi-State Working Group on EMSs, and a web site.

Evaluation and monitoring parameters consist of the National EMS Protocols and the California Supplemental Protocols. They are available on the Cal/EPA EMS website at <http://www.calepa.ca.gov/EMS>.

While the Secretary was authorized to develop a model memorandum of understanding to be entered into by the Secretary and any regulated entity that agrees to participate in a pilot project, it was found by the Working Group participants and the Cal/EPA EMS team to be unnecessary for the purposes of this evaluation. Instead, work plans were selected as the preferable document. The Final Model Pilot Project Work Plan, vetted

through the Working Groups and the public hearing process, served as a template for the development of specific work plans that describe how each pilot project is being conducted and completed. The specific work plans include descriptions of roles and responsibilities, schedules, research objectives, stakeholder involvement, data management procedures, and data assessment and analysis techniques. Prior to finalization, the specific Pilot Project Work Plans received input from the Northern and Southern California Working Groups. The Pilot Project Work Plans are not considered contracts or legal agreements and do not bind the pilots or Cal/EPA to any particular action.

Cal/EPA has reported quarterly on progress to the Legislature, and will provide a final analysis by January 1, 2002.

Cal/EPA is working with the following pilot participants:

1. Anheuser-Busch in Fairfield,
2. Wastewater treatment facilities (Central Marin Sanitation Agency in San Rafael and San Diego Metropolitan Wastewater Department, Operations and Maintenance Division),
3. IBM Corporation in San Jose,
4. Lockheed Martin Aeronautics Company (formerly the Skunk Works) in Palmdale,
5. Artistic Plating in Anaheim,
6. Pentel of America, Ltd. in Torrance, and
7. Vineyards and wineries (Davis Bynum Winery and Benziger Family Winery in Sonoma County).

Role of Cal/EPA

A multi-disciplinary Cal/EPA team, administered through the Office of the Secretary, manages the EMS Initiative. Team members from the Air Resources Board, Department of Toxic Substances Control, Integrated Waste Management Board, and State Water Resources Control Board serve as project managers for the pilots.

Funded by a grant from U.S. EPA, Cal/EPA organized four workshops for EMS Working Group participants to increase understanding about EMSs and engage in dialogue about the Pilot Projects' EMSs. Workshop topics and hands-on exercises included design and implementation of an EMS, auditing, public policy issues, and sustainability.

A new phase of the California EMS Project is well underway. Regional Working Group meetings are being organized to facilitate a dialogue between pilot project participants and stakeholders regarding facility EMS design and implementation. Pilot facilities are sharing information on EMS implementation, providing a facility tour, answering questions, and receiving feedback.

Pilot projects have received various types of assistance from Cal/EPA, depending on their need and their stage of EMS implementation. Cal/EPA is facilitating development of the winery project EMSs. EMS audit training has been provided to Central Marin Sanitation Agency (CMSA). Cal/EPA team members have participated in local advisory groups at CMSA, San Diego Metropolitan Wastewater Department, Operation and Maintenance Division, and the vineyards and wineries project, providing input to the establishment of aspects and impacts, the determination of significance and the setting of objectives and targets. Cal/EPA team members have participated in various internal and external audits of the pilot projects' environmental management systems.

Cal/EPA EMS team members have collected baseline and update data from the pilot projects on a periodic basis. One more round of data will be collected this summer before the project is completed. See Data Collection Protocols below for more information.

Data Collection Protocols

Baseline and update data on EMS design and performance have been collected. Evaluation and Monitoring Parameters have been adopted by Cal/EPA and are comprised of the national EMS data protocols and a California supplement. In coordination with other states that are members of the Multi-State Working Group on EMS, detailed national data protocols have been developed to collect standardized information on EMS design and performance. The national data protocols are available for review through a web site link at <http://www.mswg.org>. In order to answer the questions provided in PRC § 71045 et. seq., Cal/EPA is supplementing the national data protocols with additional questions, available at <http://www.calepa.ca.gov/EMS>. Using these combined protocols, also referred to as the Evaluation and Monitoring Parameters, pilot projects have submitted information in the following categories:

- environmental performance,
- regulatory compliance,
- use of pollution prevention techniques,
- continual improvement,
- employee involvement,
- involvement of interested parties,
- quality and quantity of information available to the public,
- EMS design, and
- EMS costs and benefits.

Stakeholder Involvement

Northern and Southern California Working Groups involving community groups, public interest organizations, businesses, academia, and local, state and federal regulatory agencies have been established to facilitate dialogue about Cal/EPA EMS Project design and implementation as well as regional concerns. More than 60 active participants in the regional working groups are developing a common understanding and knowledge of EMSs through training organized by Cal/EPA and funded by a grant from the U.S. EPA Office of Water. Facility tours and presentations are being provided by pilot organizations. The working groups meet several times a year to advise pilot

organizations on the development and continual improvement of their EMSs, evaluate the performance of EMSs, and explore related public policy issues.

Pilot Project Descriptions

Project descriptions include a general overview, a description of the EMS scope and maturity, and the unique characteristics of the organization's EMS.

Anheuser-Busch, Incorporated

Anheuser-Busch, Incorporated (A-BI) is a brewer of beer. A-BI and its parent company, Anheuser-Busch Companies, are headquartered in St. Louis, Missouri. The company employs more than 24,000 employees in the United States and overseas. Operations at A-BI's Fairfield, California facility include brewing, packaging, and distributing beer. The Fairfield facility has approximately 500 employees.

The Fairfield facility began development and implementation of its EMS as part of A-BI's company-wide initiative in 1992. Since 1992, A-BI has progressively enhanced its EMS through a continual improvement process. This facility impacts air, water, and natural resources. The Fairfield facility was certified to the ISO 14001 Standard in December 1999. Because of its work in aligning the corporate EMS with the ISO 14001 Standard, the Fairfield facility can offer significant information and insight regarding the environmental and economic impact associated with establishing a comprehensive EMS. The principal objective of the A-BI project is to collect design and performance information on a mature EMS.

Wastewater Treatment Facilities

The wastewater treatment facilities project comprises Central Marin Sanitation Agency and City of San Diego Metropolitan Wastewater Department, Operation and Maintenance Division.

Central Marin Sanitation Agency

Central Marin Sanitation Agency (CMSA) is a public agency in northern California that operates a regional wastewater treatment facility. CMSA treats sewage collected from San Rafael Sanitation District, Sanitary Districts No. 1 and No. 2 of Marin County, and San Quentin State Prison. CMSA is a medium-sized wastewater treatment facility that currently employs 40 individuals.

CMSA decided to implement an ISO 14001 Environmental Management System (EMS) to improve the management of both its environmental aspects and the environmental aspects of its dischargers. CMSA's operations primarily impact water-related media. However, air and land are also affected, as well as other regulated and non-regulated issues. The EMS is being implemented to address all of these in a multi-media approach. CMSA is working towards certification to the ISO 14001 Standard in the third quarter of this year. Involvement in these early stages will give Cal/EPA an idea of the resources and the processes necessary to implement an effective EMS.

After implementing an ISO 14001 EMS, CMSA will develop an "EMS template" for auto repair facilities. If successful in developing a suitable template, CMSA will consider regulatory revisions to encourage auto repair facilities to use an EMS to manage their regulatory compliance and environmental impacts. The principal objective of the CMSA project is to learn about the "bottom up" process of EMS development, participate and influence that process, and facilitate community participation in EMS design and implementation.

City of San Diego Metropolitan Wastewater Department, Operation and Maintenance Division

The City of San Diego Metropolitan Wastewater Department, Operation and Maintenance Division (San Diego), is a public agency that operates and maintains several wastewater collection and treatment facilities. These facilities include:

- Point Loma wastewater treatment plant;
- North City water reclamation plant;
- Metropolitan Operations Center;
- Metro Biosolids Center;
- San Pasqual water reclamation plant; and
- PS1, PS2, PS64, PS65, East Mission Gorge, and Penasquitos pump stations.

The Operation & Maintenance Division employs over 300 people.

San Diego has implemented an ISO 14001 EMS, certified in May of 1999, to improve the management of its environmental aspects and the management of its regulatory requirements. This ISO 14001 EMS includes a set of Standard Operating Procedures for environmental management. While the scope of the original certification addresses those environmental aspects that are within the authority of the Operation and Maintenance Division to control, they are currently integrating the National Biosolids Partnership EMS (<http://biosolids.policy.net>) into their ISO 14001 EMS. This integration will require service level agreements between San Diego Metropolitan Wastewater Department, Operation and Maintenance Division and the Industrial Pretreatment Program and the landfill, as well as increased public outreach with regard to biosolids management. The National Biosolids Partnership is comprised of the Water Environment Federation, the Association of Metropolitan Sewerage Agencies, and the U.S. EPA.

San Diego's operations primarily impact water quality. However, air quality, land disposal and beneficial use, and other regulated and non-regulated issues are also considered. The EMS is being implemented to address all of these in a continual improvement, multi-media framework. The principal objective of the San Diego project is quite similar to that of the companion project CMSA, which is to participate in and learn about the EMS design and implementation process and to facilitate community involvement.

San Diego has achieved the distinction of becoming the first publicly owned treatment works to certify to the ISO 14001 EMS Standard in the U.S. The perspective and experience of publicly owned and operated facilities complements the pool of pilots from the private sector. In addition, the operation and maintenance of these facilities is heavily regulated and thus presents the opportunity to strive for better performance while satisfying the requirements of many regulatory authorities.

IBM Corporation

International Business Machines (IBM) creates, develops and manufactures advanced information technologies, including computer systems, software, networking systems, storage devices, and microelectronics. The company employs close to 290,000 people in over 150 nations. The San Jose Storage Technology Division site employs approximately 8,000 workers who develop, manufacture, and market storage components and systems. Manufactured products include thin film magnetic recording heads, thin film storage disks, and disk drive systems.

In June 1997, as part of IBM's program to register all of its manufacturing and development sites worldwide, the San Jose Storage Technology Division site became the first IBM facility in the U.S. registered to ISO 14001. This facility has since undergone annual audits to ensure its continued conformance with the ISO 14001 Standard. IBM's San Jose facility has identified its significant environmental aspects, including air emissions, water use, waste discharges and employee transportation. The EMS implemented at this facility addresses each of its significant aspects and their respective environmental impacts.

Because IBM was certified to ISO 14001 in 1997, it provides a unique opportunity to see pre- and post-EMS data much earlier in the pilot project process. The IBM project affords the opportunity for production of a rich performance data set from a complex facility in a highly competitive business sector.

Lockheed Martin Aeronautics Company – Palmdale

Lockheed Martin Aeronautics Company - Palmdale (LM Aero-Palmdale), formerly Lockheed Martin Skunk Works, is a private aerospace company within Lockheed Martin Corporation. LM Aero-Palmdale specializes in the rapid development of advanced aerospace prototypes, technology, and systems. LM Aero-Palmdale was created to design and develop the P-80 Shooting Star, America's first production jet aircraft. Their work continued with the development of the U-2, SR-71 Blackbird, and Low-Observable Technology aircraft like the F-117A Stealth Fighter, F-22 Advanced Tactical Fighter, and the Joint Strike Fighter. Approximately 4,500 employees work at the Palmdale, California facility.

The environmental management system operated by LM Aero-Palmdale has been in place since 1992. Their system combines occupational health aspects with environmental compliance and pollution prevention and is referred to as the Environmental, Safety and Health Management System (ESH-MS). LM Aero-Palmdale self-declared conformance to the ISO 14001 Standard in 1998. The ESH-MS is part of

a corporate-wide EMS program. Corporate audits and reviews are integral to the Lockheed Martin EMS program. The unique objective in this pilot is to collect design and performance information on a mature EMS from the defense sector to learn how an EMS can improve the quality and quantity of information shared with stakeholders.

Artistic Plating

Artistic Plating is a medium-sized, 145 employee, metal finishing facility in Anaheim, California. The facility performs copper, nickel, brass, and chrome electroplating. Artistic specializes in electroplating zinc die-cast parts and aluminum wheels for commercial customers.

The special focus of this project is to learn about the value of an EMS template, workshop and contractor assistance, as well as the support of an industry association, for EMS implementation with small and medium-sized enterprises. Artistic is in the developmental stages of implementing an EMS. Involvement in these stages is giving Cal/EPA an idea of the resources and the processes necessary to implement an effective EMS at small and medium-sized enterprises (SME).

Artistic Plating has volunteered to test an EMS template developed by U.S. EPA as part of the Merit Partnership Metal Finishing EMS (MFEMS) Template project. The Merit Partnership for Pollution Prevention (Merit) is a cooperative venture of the public and private sectors whose mission is to develop and promote pollution prevention practices and technologies that both protect the environment and contribute to economic growth. Merit is conducting a series of pilot projects to evaluate the environmental and economic results of ISO 14001-based EMSs in various industries. The MFEMS Template is intended to provide a simplified and industry-specific template that can form the basis for a company's EMS, and that could, when implemented, serve as an initial step towards ISO 14001 certification.

Unique aspects of this project include

- development of an industry-specific EMS template,
- focus on small and medium sized enterprises and how EMSs might help them,
- involvement with the industry association, and
- demonstration of a joint U.S. EPA and Cal/EPA pilot project.

Nine metal finishing companies, including Artistic, completed a series of workshops learning to develop and implement an EMS at their facilities. U.S. EPA sponsored these workshops for interested members of the Southern California Metal Finishing Strategic Goals Program (Strategic Goals Program). The Strategic Goals Program is a voluntary, multi-stakeholder program aimed at improving environmental performance, exceeding compliance, and reducing business and environmental costs at metal finishing facilities. At its core is a set of environmental performance goals for metal finishers and a set of "enabling actions" other stakeholders will undertake to help metal finishers achieve the goals. Members of the Strategic Goals Program include U.S. EPA, Cal/EPA, local regulatory agencies (i.e. water and air), metal finishing companies, the Metal Finishing Association of Southern California, academics, and non-governmental organizations.

Pentel of America, Ltd.

As a leading international manufacturer of writing instruments, stationary goods, and art supplies, Pentel Company, Ltd. has facilities located worldwide. Headquartered in Tokyo, Japan, the company employs a total international workforce of 2,100 employees. Products manufactured include automatic (mechanical) pencils, non-refillable roller ball pens, refillable ballpoint pens, gel ink pens, ink, lead, erasers, correction fluid, highlighters, markers, crayons, water and oil paints, pastels, glue, and artist brushes. Pentel invented roller ball technology and pioneered graphite lead. In addition, Pentel is the only writing instrument company to receive the Deming Award for recognition of the highest standard of quality.

Pentel of America, Ltd. is headquartered in Torrance, California. Although there are offices in several states, and a separate blister packaging facility in Torrance, all U.S. manufacturing is carried out at the Torrance Factory. Operations include precision metal machining, plastic injection molding, water-base ink production, and writing instrument assembly and packaging. There are approximately 200 employees at the Torrance Factory.

The Torrance Factory officially began EMS development in October of 1999, with the intention of obtaining ISO 14001 EMS registration in the late summer of 2001. Pentel manufacturing facilities in Ibaraki and Yoshikawa, Japan have successfully completed ISO 14001 registration, while the factory at Soka, Japan is nearing implementation of its EMS. These efforts together reflect the Japan headquarters' long-held policy to preserve and improve the environment, and its support of ISO 14001 is one of the tools for accomplishing this objective.

Pentel's Torrance Factory directly impacts air and waste, and to a lesser extent, water and traffic. The EMS that is being implemented at this facility will address each of these impacts. Although a formally identified EMS will be a new addition, environmental concerns have traditionally influenced management decision-making and planning. Recently, the company made a significant investment in the installation of a state of the art, self-contained and completely enclosed, carbon dioxide degreasing system to reduce solvent use and thereby minimize air quality impacts. It is expected that the systematic approach of an EMS will result in further environmentally related benefits in the areas of reduced waste generation, increased recycling of plastics and other materials, more efficient hazardous waste handling, and additional improvements in air quality, particularly in oil and particulate emissions.

This pilot project contributes the perspective and experience of working with a medium-sized manufacturing facility, which is seeking to integrate, to the degree possible, an ISO 14001 EMS with the currently existing ISO 9001 registered quality system. Furthermore, the heterogeneous nature of this particular manufacturing plant combines a variety of manufacturing processes within a single facility, providing a more extensive trial of the ISO 14001 EMS model than would occur in more homogeneous industries.

Vineyard and Winery EMS Project

Two wineries, Davis Bynum and Benziger Family Winery, participate in the Vineyard and Winery EMS Pilot Project.

Benziger Family Winery

The Benziger Family Winery is located on the east side of Sonoma Mountain, above the village of Glen Ellen, where it is bordered by Jack London State Park to the west. The Benzigers have operated their winery and vineyards at this location since purchasing the 85-acre Sonoma Mountain Ranch in 1980. Sixty-five acres of vines are planted at the ranch. Another twenty-acres of vines are planted in nearby Sonoma Valley. Grapes are also purchased from more than 60 growers. The Benziger Family Winery is a medium-sized winery producing 180,000 cases of wine per year.

Davis Bynum Winery

The Bynum family has owned and operated their winery and vineyards on 83 acres near the town of Forestville in the Russian River Valley since 1973. Twenty acres of the ranch are planted in vines. Davis Bynum is a small winery, crushing 250 to 275 tons of grapes annually to make approximately 15,000 cases of wine per year. The winery and vineyard is primarily operated by four members of the Bynum family and a head winemaker. Davis Bynum also purchases grapes from neighboring growers.

Both Davis Bynum and Benziger have operated their wineries and vineyards in an environmentally conscious manner, and while they do not have fully developed EMSs, they do implement environmental business practices. Both of their wineries, excluding vineyards, have been certified as Sonoma Green Businesses and Bay Area Green Businesses. This means that they comply with all environmental regulations and incorporate pollution prevention and resource conservation into their business practices.

Each of their vineyards has been insecticide and herbicide-free for several years and has practiced sustainable agriculture techniques. Davis Bynum is in the process of registering with the California Department of Food and Agriculture organic growers program and the California Certified Organic Farming (CCOF) program. Davis Bynum is now exploring the use of permaculture (permanent agriculture) in their vineyards and has started by developing a three-acre Mediterranean Permaculture Food Forest. Permaculture is the conscious design and maintenance of agriculturally productive ecosystems that have the diversity, stability, and resilience of natural ecosystems.

Benziger is now practicing biodynamic farming in their vineyards. While similar to organic agriculture in the elimination of chemicals, biodynamics goes further in responding to the earth's natural energies and cycles and in its emphasis on a closed, self-contained ecosystem. The Benziger family plans to have their two properties in Sonoma County certified in 2001 by the Demeter association, the international organization that monitors and approves biodynamic practices.

As a Cal/EPA Pilot Project, Davis Bynum and Benziger Family Winery are now organizing their environmental business practices into an ISO 14001-based EMS. Their EMSs will include and integrate winery and vineyard operations.

This pilot project will allow Cal/EPA to study the development and application of an EMS in an agricultural sector (wine grape vineyards). The participation of both wineries in the Sonoma Green and Bay Area Green Business Programs is another unique aspect of the pilot. These programs certify businesses that are in compliance with all environmental laws and are operating beyond compliance by implementing pollution prevention and resource conservation activities.

Removal of Gene's Plating from the Cal/EPA EMS Project

One of the pilots was removed from the Cal/EPA EMS Project. After expressing initial interest in developing an environmental management system (EMS), Gene's Plating failed to follow through and implement an EMS. An investigation by the Department of Toxic Substances Control (DTSC) and Los Angeles County Fire Department, and a subsequent enforcement action by the Los Angeles City Attorney's office last year led to Gene's Plating being removed from the project. Gene's Plating was notified of their removal from the project by letter dated November 30, 2000. An analysis and some initial conclusions are summarized in the *Report to the Legislature: Fifth Quarterly Update (October through December 2000)*.

Environmental Performance Improvements

The ability of an EMS to increase public health and environmental protection over those protections provided through the current regulatory system is demonstrated in two ways. First, by evaluating indicators of environmental performance, such as improved compliance with environmental regulation, reduced generation of hazardous waste or reduced use of electricity prior to EMS adoption and after EMS adoption, improvements in public health and environmental protection can be quantified. Secondly, improvements in public health and environmental protection can be qualitatively described by evaluating the system of environmental management employed by an organization.

Findings

- Pilot project participants
 - (1) improved compliance with environmental regulations through their EMSs,
 - (2) further reduced environmental risks through improvements in regulated activities, including generation and handling of hazardous wastes, water and air emissions, and worker health and safety, and
 - (3) reduced environmental burden through improvements in unregulated areas, including energy use, solid waste management, water use, and transportation impacts.

- Reductions in environmental burdens had multi-media benefits.
- For those pilot participants that track and report EMS costs and benefits, ongoing benefits outweigh the initial cost.

Compliance

Pilot participants have demonstrated improved compliance as a result of implementation of EMSs. Improved compliance is demonstrated by the reduced number of citations issued by regulatory agencies as well as by improved awareness of regulatory requirements.

History of Improvement

Artistic Plating's compliance record has improved between their baseline and the update period. Artistic was not cited for any violations after their 1997 baseline through their year 2000 update data, while they had been cited for seven violations in the 1996-97 baseline period. In order to ensure compliance, copper discharges to the local wastewater treatment plant were reevaluated through their EMS process and reduced by monitoring the wastewater treatment process more closely and fine-tuning the pre-treatment process. It appears that the compliance improvement was in large part due to the systematic focus on compliance responsibilities afforded by the EMS, which included a complete compilation of all legal responsibilities, the communication of these responsibilities to all employees, and the creation of an effective compliance management system.

Significant improvements in environmental regulatory compliance have been derived from the EMS at Lockheed Martin Aeronautics Company in Palmdale (LM Aero–Palmdale). Since 1993, one notice of violation and four non-compliance events occurred. No violations have occurred since 1998.

Improved Awareness of Requirements

By using a corporate Environmental, Safety and Health (ESH) web site, LM Aero–Palmdale employees are able to keep apprised of legal and other requirements. Updated weekly, web site content includes regulatory information, guidance modules, best practices, training documents, energy saving information, and industry standards. The web site receives over 1600 hits per day. LM Aero–Palmdale staff also maintain a Master Reports List that identifies all environmental reports, the responsible agency, employee responsibility for the report and the due date. This facilitates tracking of all environmental reporting requirements.

Federal, State, and local regulatory requirements for Central Marin Sanitation Agency (CMSA) are quite extensive. Before performing the gap analysis and regulatory review required by the ISO 14001 Standard, CMSA had no central library of regulatory requirements and no document control system in place to manage the most current requirements and reporting procedures. Now CMSA has both a comprehensive library where the latest documents are housed as well as procedures for monitoring and reporting to regulators.

Regulated Areas

Pilot project participants demonstrated improvements in regulated areas as a result of their EMSs. Improvements include systematic management and reduction of toxic releases and hazardous waste, wastewater, air emissions, and worker health and safety problems. In many cases, performance improvements made went significantly beyond that required by law.

Management of Toxic Releases and Hazardous Waste

LM Aero—Palmdale has reduced production-related hazardous waste disposal by 82% (or by 1,174 tons) since 1992. Toxic chemical releases, reportable under the Superfund Amendment and Reauthorization Act (SARA), have decreased 91% (or by approximately 100,000 pounds) since 1991. LM Aero has been below the reporting threshold since 1996.

Between 1992 and 2000, total hazardous waste (production and non-production related) was reduced 91% at LM Aero—Palmdale. Prior to establishing their EMS in 1991, they generated 3,692 tons of hazardous waste compared to 448 tons in 1998. While between four and five hundred hazardous materials were used to support predecessor aircraft, the Joint Strike Fighter concept demonstrator aircraft uses fifty-four hazardous materials. All of these reductions represent environmental aspects that were determined to be significant by LM Aero-Palmdale. (Cal/EPA also found these aspects significant). Performance targets for each of these environmental aspects were established. On the basis of these findings, and the fact that performance enhancements went beyond that required by any permit, regulation, or order, it appears the reason for the improvement was the EMS and the process it represents.

Artistic Plating's top five environmental aspects and impacts are

- perchloroethylene vapors from degreasing operations,
- chromium-containing wastewater from chrome plating,
- cyanide-containing wastewater from cyanide plating,
- liquid chlorine from cyanide wastewater reduction processes, and
- nitric acid from stripping operations.

A significant change by Artistic Plating was the elimination of perchlorethylene and replacement with an ultrasonic aqueous immersion cleaning tank for parts cleaning. This yielded a decreased public exposure risk, decreased risk to workers and decreased worker compensation insurance premiums, decreased medical and biological monitoring, decreased lab analysis and disposal costs, decreased air sampling costs, and decreased air quality district emission fees.

Artistic has reduced total chromium discharge to a level 50% lower than the permitted limit through several source reduction actions. Specifically, a new drip board was installed to reduce dragout (loss of chemicals from a plating tank), workers received dragout reduction training, and anodes were repositioned to achieve comparable plating at a lower chromium concentration.

The target to reduce Artistic's cyanide discharge concentration to a level 50% lower than the permitted limit has been achieved through source reduction actions, improved treatment and waste treatment. A third-stage cyanide treatment unit was added, workers received dragout reduction training, and the pH of the cyanide baths was lowered which improved cyanide treatment. Moreover, increased analytical monitoring was implemented on a bi-weekly basis to fine-tune the cyanide reduction pretreatment process. Finally, a cyanide-based nickel strip was eliminated from cyanide plating operations allowing for a 50% reduction in the amount of liquid chlorine usage.

In 2001, nitric acid usage has declined by 62% from the use of alternative chemicals that Artistic is testing. The target to reduce nitric acid use by 95% is in process. Material substitution alternatives are under investigation. Communication with chemical supply companies is ongoing in the search for more environmentally-benign chemicals.

All of these environmental aspects of the metal plating operations at Artistic were identified as significant in the EMS process. As a result, performance targets were set, a management system was established, and enhanced performance was achieved. As with other pilots, several of the performance enhancements went beyond legal requirements, suggesting the reason for the achievement is the EMS, and the process it established.

San Diego Metropolitan Wastewater Department, Operations and Maintenance Division has reduced the inventory of miscellaneous chemicals (cleaners, degreasers, lubricants, etc.) by 33%. Process optimization efforts have resulted in the Metro Biosolids Center reducing their cationic polymer use by 23%.

Wastewater

Artistic has reduced sludge volume indirectly by the installation of conductivity sensors in the rinsing tanks. Dragout techniques have been put into practice, enforced more strictly, and the overall operation of wastewater processes are monitored more consistently. Moreover, two additional wastewater treatment operators were added to this operation. Copper discharges to the sewage treatment plant were reduced by monitoring the wastewater treatment process more closely; fine tuning the pre-treatment process; and monitoring the wastewater discharge twice daily, using spectrophotometry equipment. Efforts to reduce process water use through source reduction and in-process recycling are ongoing.

Wastewater volume had increased in 1999 because a new wheel line requiring more water had been added to Artistic's production process. Conductivity sensors were added to all rinsing tanks. With the installation of this new equipment, Artistic realized a 72% decrease in wastewater produced in the wheel line, from 12,960 gallons to 4000 gallons per day.

Air Emissions

Since 1990, volatile organic compounds have been reduced 80% at LM Aero-Palmdale. Volatile organic compounds were reduced from 256,000 lbs. in 1990 to 41,000 lbs. in

1998. Emissions of ozone depleting chemicals have been reduced from 403,000 lbs. in 1988 to zero in 1995.

Artistic's elimination of perchloroethylene as described above also resulted in a benefit to air quality.

Worker Health and Safety

Worker safety and health problems, indicated by "Days Away Case Rate," have been reduced by 66% since 1995 at LM Aero—Palmdale. They are 75% below the industry average.

Artistic's elimination of perchloroethylene as described above resulted in reduced risk to worker health and safety.

Unregulated Areas

Pilot project participants demonstrated improvements in unregulated, yet important areas as a result of their EMSs. Improvements include systematic management and reductions in energy use, solid waste disposal, water use, and employee transportation impacts.

Energy

While energy use is unregulated by government environmental agencies, it is monitored by organizations to achieve cost savings and environmental benefits.

The San Diego Metropolitan Wastewater Department, Operations and Maintenance Division estimates that the North City Water Reclamation Plant reduced its normalized electrical use by 10% for calendar year 2000. They estimate that Division-wide, they have exceeded their 5% reduction target.

CMSA has prioritized objectives for reducing power consumption. One of the high priority objectives is the replacement of inefficient centrifuges for sludge drying with energy-efficient centrifuges.

Over the past several years, IBM has consistently met its energy conservation target, which is defined as an annual 4% reduction in consumption relative to what the consumption would have been in a given year without the conservation measures. One strategy used towards meeting the target involves the replacement of motors for production-related activities with high efficiency motors. IBM has met its energy conservation target of 4% for calendar year 2000.

Solid Waste

While a 50% solid waste disposal reduction is mandated for local government jurisdictions, businesses and industry are not regulated by this State law. Nevertheless, most pilot project participants have included increased recycling and/or decreased landfill disposal as an objective in their EMSs.

The IBM San Jose facility is on schedule to meet its current target to recycle 73% of its solid wastes, which exceeds IBM's corporate goal of 67%. The primary solid wastes that are recycled include scrap metals (41% of the total recycled materials), wood and landscape materials (18%), cardboard (14.6%), paper (9.7%), and construction materials (9.4%)

The Anheuser Busch, Fairfield, brewery achieves a 98.3% recycle rate of its wastes and byproducts.

Estimated landfill contributions were reduced 23% since 1999 for the San Diego Metropolitan Wastewater Department, Operations and Maintenance Division.

Water Use

Potable water use was reduced by 3% from 1999 and 33% from 1998, as reported by San Diego Metropolitan Wastewater Department, Operation and Maintenance Division.

Employee Transportation

CMSA's employee brainstorming activities generated multiple environmental impact-reducing activities. Employees suggested an alternative work schedule that would allow for 10-hour workdays covering only 4 days a week. The impact of this simple plan has reduced the number of commute trips 20% for operators and unexpectedly reduced the number of overtime hours.

IBM instituted programs to increase employee participation in commute alternatives that help to reduce congestion and improve air quality. Examples include providing each employee with a free pass to use public transportation as well as operating a shuttle service to the site from nearby transit stops and other local IBM locations. IBM measures the use of key elements of its Alternative Commute Program. For example, annual survey data show that employee participation in one of its programs (EcoPass) increased 52% from 1998 to 1999, and was used by approximately 24% of the site population.

Cost Savings

Hazardous waste disposal in 1991 cost LM Aero–Palmdale \$1,421,000 compared to \$375,000 in 1998.

For A-BI, the implementation of the EMS has led to decreases in energy costs, water and wastewater expenses, carbon dioxide costs, landfill disposal and transportation fees, hazardous waste disposal fees, and ammonia purchases. An indirect monetary benefit realized as a result of its EMS is the decreased insurance costs, environmental liability and workers compensation costs.

The costs and benefits realized from managing perchloroethylene, total chromium, cyanide, liquid chlorine, nitric acid, copper, and sludge are described below from estimates by Artistic Plating.

The elimination of perchloroethylene cost \$130,000 in initial implementation and will save in the range of \$9,500 to \$10,500 per year in decreased air sampling costs, decreased medical and biological monitoring, savings in testing and lab analysis, decreased disposal costs, and reduced air quality factor emission fees. In addition, Artistic's insurance company intends to reduce workers compensation insurance premiums.

Discharges to the local treatment plant were reduced through increased water testing and lab analysis at a cost of \$2,000 per year for total chromium, \$4,500 per year for cyanide, and \$2,000 per year for copper. A third stage tank with mixer and controls was added at a cost of \$10,000.

Liquid chlorine usage was reduced, yielding \$42,000 per year in savings. A reduction in other wastewater treatment materials saved \$6,000 per year.

Nitric acid cost savings of \$360 per day are realized through the reduction of plating rejects. Costs from nitric acid use in 2000 came from treatment of spent triacid (70% nitric acid) totaling \$1,050 per week in additional costs, as well as \$450 in added caustic soda costs per week. In 2001, nitric acid costs are being reduced by \$750 per week through the testing of various substitutes.

Decreased sludge volume led to a savings of \$18,896 per year in disposal costs, and \$2,500 savings in reduced quantity of testing and lab analysis required. These savings justified the hiring of an additional treatment operator in April 2001 at \$26,000 per year.

Robust and Effective Systems for Public Health and Environmental Protection

As an industry representative on the Cal/EPA Southern California Working Group stated, all organizations with a responsibility for protecting the environment have an environmental management system, the question is how effective is that system in protecting the environment. This section describes findings related to improved environmental protection due to implementation of better systems of environmental management.

Improved environmental protection begins with organizations becoming more systematic in their approach to environmental management. A systems approach to environmental management provides information on impacts and current performance, clear policy and targets, implementation strategies and plans, measurement and review of progress, and adjustments to the system to maximize performance. The ISO 14001 EMS Standard provides a consistent and systematic framework for improved environmental performance, by providing organizations with a clear structure to follow when developing an EMS. Further, the ISO 14001 Standard provides more consistent EMS implementation and the possibility of third party certification for adherence to the Standard. Finally, the ISO 14001 Standard identifies the necessary system elements

for improving environmental performance and can be used to evaluate the potential effectiveness of an EMS.

There are several key indicators of a robust system for public health and environmental protection including:

- An environmental policy describing the organization's commitments and principles in regards to environmental protection;
- Demonstrated knowledge and understanding of environmental laws, regulations, and other requirements;
- Demonstrated knowledge and understanding of the environmental impacts (regulated and non-regulated) of the organization;
- Documentation of objectives and targets for environmental performance improvements (lessening negative environmental impacts);
- Documented implementation strategies and responsibilities designed to meet regulatory requirements and achieve objectives and targets for environmental improvement; and
- Measures and a review process to assess both the management system and environmental performance and to make adjustments in order to continually improve both.
- Ideally, broad public and stakeholder input into the EMS process and ready public access to information about both the EMS and environmental performance (not required by ISO 14000).

An EMS with these characteristics can provide for public health, and for environmental protection that goes beyond legal and regulatory requirements, in two ways. First, an EMS can address the non-regulated impacts to public health and the environment that result from issues like natural resource depletion, energy consumption, or green house gas emissions. Secondly, an EMS with the above characteristics includes mechanisms to better meet or exceed legal and regulatory requirements.

Findings

- Each pilot project based their EMS on the ISO 14001 Standard. Three organizations, IBM, Anheuser-Busch, and San Diego are certified to ISO 14001; Lockheed Martin has self-declared that it meets the ISO 14001 Standard; Pentel and CMSA intend to certify to the ISO 14001 standard later this year; Davis Bynum and Benziger Family Winery are basing their EMS on ISO 14001, and Artistic Plating is using the Merit Partnership ISO 14001 based Metal Finishing EMS Template.
- ISO 14001 based EMSs provide structure to establish policy direction, understand impacts, set improvement targets, measure progress towards objectives, review performance and continually improve the EMS.
- Pilot projects demonstrate the improved environmental protection realized through EMS implementation.

- The ability to set environmental performance improvement objectives and measure progress towards objectives may have public policy applications in driving performance of an individual company or industry sector to meet public policy goals.

Environmental Policy

A primary indicator of a robust and effective EMS is the presence and content of an environmental policy. The ISO 14001 Standard defines an environmental policy as a statement by the organization of its intentions and principles; in relation to overall environmental performance; which provides a framework for action; and for the setting of environmental objectives and targets to lessen negative environmental impacts. Environmental policies of the Pilot Projects are included in the appendices.

The environmental policy of each pilot project is signed by their senior management and is an initial demonstration of management support and environmental commitment necessary for an effective EMS. The environmental policies of the pilot projects follow the requirements of ISO 14001, including management commitments to:

- Compliance with relevant environmental laws and other requirements,
- Pollution prevention, and
- Continual improvement.

The Benziger Family Winery's environmental policy demonstrates this commitment by stating: "Benziger Family Winery is committed to identifying and promoting the most environmentally safe and sustainable business and farming practices. We believe that sound environmental policy will lead to an increase in product quality as well as the social well being of our employees and community. We will:

- Continually monitor and improve environmental performance through an EMS.
- Comply fully with the letter and spirit of environmental laws and regulations.
- Seek to prevent pollution before it is produced and reduce the amount of waste at our facilities."

Above is only a portion of Benziger's environmental policy. Their complete policy is included in the appendix.

Understanding Laws and Regulations

Another indicator of a robust and effective EMS, especially in maintaining environmental compliance, is the organization's knowledge and understanding of environmental laws and regulations. This can be measured through the pilot's documentation of all environmental requirements and the presence of procedures for updating and communicating requirements to employees.

EMS development helped Pentel identify previously unknown regulations. As part of their process to document all environmental requirements, Pentel invited the small business assistance representative for the South Coast Air Quality Management District. Through this visit, Pentel identified a previously unknown regulatory requirement for the elimination of the volatile organic compound (VOC) threshold exemptions for general cleaning of plastics, and subsequently set an objective to eliminate the use of alcohol for plastic cleaning.

Aspects and Impacts

The capacity of an organization to know and understand the environmental impacts of their regulated and unregulated activities is another indicator of an improved system for public health and environmental protection. In an ISO 14001-based EMS, this process begins with the organization identifying their environmental aspects. An environmental aspect is defined as any element of an organization's activities, products, or services, which can interact with the environment. Environmental aspects are then evaluated in order to determine which aspects have or can have significant impacts on the environment.

At LM Aero–Palmdale, in order to identify which of their aspects have a significant impact, aspects are evaluated in terms of environmental safety and health impacts as well as business impacts. The probability of an impact occurring and the environmental consequence of that impact are ranked low, medium, or high. Business impacts are evaluated in terms of compliance, costs and stakeholder interest/concern and are also ranked low, medium, or high. The two scores are combined on a risk/significance matrix which yields a significance level. Impacts ranked at level 1 have the highest risk/significance while level 5 have the lowest risk/significance. Through this analysis, LM Aero–Palmdale better understands the risk and significance of their environmental impacts and designs management responses accordingly.

Objectives and Targets

While understanding that the impacts of an organization are important to improve public health and environmental protection, true improvements can only be achieved when an organization has identified objectives and targets for environmental performance improvements. According to the ISO 14001 Standard, the organization shall ensure that the aspects related to significant impacts are considered in setting its environmental objectives. Objectives and targets may be performance driven, such as a reduction in waste generation, management focused, such as establishing a pollution prevention committee, or related to gathering better information on a particular aspect. The evaluation of aspects and impacts and the setting of environmental objectives and targets are a primary way that an organization with an EMS improves compliance with regulated environmental aspects and addresses environmental impacts that are not required through the regulatory system.

IBM – San Jose's EMS demonstrates the potential to drive environmental performance beyond regulatory requirements through aspect and impact identification and objective and target setting. All of IBM San Jose's objectives and targets achieve results that are not compliance–related or compliance driven. The objectives and targets may address an aspect/impact that has regulatory elements, but the actual program either exceeds compliance requirements or works with non-regulated elements of the aspect/impact. As an example, the following table presents IBM San Jose's aspects and objectives and targets.

Aspect/Impact	Objective and Target
Energy Use	Conserve 4% electrical usage (kWh)
Solid Waste	Recycle 73% of solid waste Recycle 90% of industrial waste
Water Use	Track site water use and trends
Transportation (employee)	Increase Eco Pass users by 10% Commuter Check users by 25%
Products (environmental impacts)	Various objectives covered under Environmentally Conscious Product Strategy
Water Discharge	Reduce wastewater discharge year to year indexed to production
Chemical Use	Establish chemical use reduction committee and set target
Hazardous Waste Discharges	Reduce disposal amount year to year indexed to production

Environmental Management Programs and EMS Implementation

To facilitate the achievement of environmental objectives and targets, a robust and effective EMS will include an environmental management program. This is a strategic plan of action for the realization of environmental goals and describes how objectives and targets will be achieved. The environmental management program template developed for the Vineyard/Winery Pilot Project and used by Davis Bynum and Benziger Family Winery identifies resource needs, required actions, responsibilities, schedules, and performance indicators to track progress towards goals. An environmental management program like the one used in the Vineyard/Winery EMS Template, is a required feature in an ISO 14001 EMS and is the basis for the implementation phase of the EMS.

Implementing the environmental management program is only one element of EMS implementation; others include training, communication, operational control, and emergency preparedness and response. Each of these components supports the organization in meeting its environmental commitments and achieving objectives and targets and thus helps provide greater environmental protection.

Although there are many legal requirements for employee training, an EMS can improve an organization's training programs in two ways. First, an EMS can identify training needs and provide mechanisms to ensure personnel receive necessary training and are competent in the subject matter. Secondly, by training employees on the policy, objectives and programs of the EMS, employees can better understand how their jobs can impact the environment and clearly understand their responsibility toward meeting the environmental performance goals of the organization. At IBM, prior to ISO 14001 EMS implementation, the on-the-job and classroom training focused on compliance with

legal, regulatory and corporate environmental requirements. Following EMS implementation, employees received additional EMS awareness training annually. The EMS awareness training tied the job responsibility training more directly to the site EMS, including the employee's contribution to meeting environmental objectives.

Internal communication can also be improved through EMS implementation resulting in greater environmental protection. At Artistic Plating, an EMS information board helps employees follow the progress towards environmental objectives. This improvement in communication, coupled with increased employee understanding of the EMS and environmental performance goals, have resulted in creative pollution prevention ideas coming from plating operators.

At CMSA, communication between staff and management has improved as a result of the EMS program. The non-management employees previously had little input into operational needs and potential improvements. Now, through EMS implementation, multiple subgroup teams address specific environmental aspects of their organization. The subgroups have created a mechanism for voicing the interests of the employee and staff level input, and have generated insightful suggestions for improving operations based on first-hand knowledge of the system. For example, performing routine maintenance on a given pump may be more complex and may increase the impact on facility operation during peak flow periods through the day. Workers have suggested that evening staff perform routine maintenance during off-peak hours to conserve resources.

Better awareness by employees of the environmental impacts of their jobs and the environmental objectives articulated in their EMS appears to have resulted in the Anheuser-Busch, Fairfield brewery being the lowest water user and wastewater discharger within Anheuser-Busch's 12 breweries. This is attributed to employee awareness of the ISO 14001 "positional impacts", as defined by employee job assignment/duties and codified within written Standard Operating Procedures. These are communicated in training and at the workstation for employee environmental awareness. The company communicates the EMS standards of excellence to their employees and the management is involved in identifying and addressing 'significant impacts' with defined plans prescribed to minimize impacts.

An important element of EMS implementation is operational controls. The purpose of operational controls in an EMS is to ensure that significant environmental aspects are managed in a way that is consistent with the environmental policy, so that the EMS objectives and targets for those aspects are met. At LM Aero-Palmdale, chemical management and disposal are significant aspects and require extensive control. The major elements of the chemical control program involve the Chemical Control Board (CCB) and the chemical control cribs. In addition to pollution prevention projects, the CCB is responsible for approving all chemical purchases at LM Aero-Palmdale. Their review includes an analysis of the ESH risk involved with the chemical, the need for the chemical, and a search for less toxic alternatives. The daily use of chemicals is tracked and managed through a system of chemical control cribs. This daily accounting allows

LM Aero—Palmdale to meet the daily volatile organic compound (VOC) tracking requirements of the Antelope Valley Air Pollution Control District Rule 109, the Los Angeles County Fire Department requirement for reporting hazardous materials use, and other regulatory requirements for chemical tracking.

Internally, the package-by-package tracking of chemical use provides operational control. Combined with the approval process of the Chemical Control Board, the cribs ensure that no unauthorized chemicals are being used. The crib process also contributes to meeting pollution prevention goals. The accounting system reduces chemical usage and waste by ensuring that only necessary amounts of chemicals are provided to employees. This also has reduced the amount of chemicals that become waste due to shelf-life expiration.

Another element of EMS implementation is the preparation for and response to emergencies. Although emergency response capabilities are required by regulation, an EMS can improve an emergency response program through better communication, training, annual drills and system audits. San Diego Metropolitan Wastewater Department, Operation and Maintenance Division reported several improvements to the emergency response program as a result of their EMS. They have expanded the employee, visitor, and contractor participation and awareness as a result of meeting the ISO 14001 requirement for periodic testing of emergency response procedures. They have developed new procedures to ensure that current hazardous material inventory and response documentation are available. A third party audit of their EMS identified other areas for improvement including employee awareness, spill response equipment documentation and monitoring, and alarm and announcement system upgrades.

Pentel of America is in the process of developing their EMS and has already seen improvements in how they prepare for and respond to emergencies. As a result of their EMS, an entirely new analysis was performed in each department to identify any potential for emergency events to occur that would have an adverse impact on the environment. In response to that analysis, emergency/accident prevention and mitigation plans and procedures are being developed for all emergency scenarios that were identified.

Implementing pollution prevention programs is another way pilot organizations have improved environmental protection beyond legal requirements. While most of the pilot projects reported some pollution prevention activities prior to implementing their EMS, each stated that EMS implementation has aided their pollution prevention programs. EMS implementation has also increased some pilots' understanding of what constitutes pollution prevention. For example, at Anheuser-Busch, prior to EMS implementation, pollution prevention techniques were thought to be end-of-pipe technology and recycling. After EMS implementation, Anheuser-Busch has adjusted its understanding of pollution prevention to be proactive rather than reactive. Pollution prevention is now centered on reduction and reuse, and has been expanded to include air emission reductions resulting from energy conservation.

Other pilot projects reported that the EMS created a greater emphasis and understanding of pollution prevention throughout the organization. Pentel of America reported that their EMS increased emphasis, visibility, and organization of pollution prevention efforts. At IBM their EMS, “Simply provided additional structure and increased awareness of existing, ongoing pollution prevention opportunities.” Similarly, the EMS at Artistic Plating is “continuing to make the company more conscious of pollution prevention opportunities.” At LM Aero-Palmdale, the EMS has allowed the full integration of pollution prevention into all business functions in order to reduce environmental impacts.

Environmental Performance Review and Continual Improvement

The ability of an organization to review environmental performance and make system adjustments in order to improve public health and environmental protection on a continual basis is the final indicator of an effective EMS. In an ISO 14001-based EMS, information on environmental performance is collected two ways. One source is through internal or third party EMS audits. The other involves the direct measurement of environmental performance indicators, which are most often related to objectives and targets of the EMS. Management then reviews this information and determines the appropriate response actions to ensure continual improvement in public health and environmental protection.

An EMS audit is a systematic and documented verification process to determine whether an organization’s EMS is effective in carrying out the environmental policy, environmental management programs, and progress towards objectives and targets. Under the Anheuser-Busch, Fairfield audit program, teams of corporate environmental staff, on-site environmental staff, and external consultants conduct audits at each facility. The frequency of audits conducted at individual facilities is based on risk. The greater the risk, the more often audits are conducted. Previous audit results, the number of fines and amount of penalties incurred, and the any sensitive issues are all factors influencing the audit schedule.

A performance review is another way to assess an EMS’s effectiveness and plan for system improvements. To assess the overall effectiveness of IBM’s EMS and to identify opportunities for continual improvement, IBM monitors and measures key characteristics of the site’s activities and operations that can have a significant impact on the environment. “Key Characteristics” are defined at IBM to include operation conditions or parameters in the following categories:

- Parameters directly associated with a regulatory permit conditions or discharge limit;
- Parameters associated with the measurement of critical elements of the established objectives and targets, and or
- Critical parameters associated with site significant environmental aspects.

Information on these key characteristics is considered in the annual review and update of aspects, objectives and targets. Programs, procedures and documentation are also reviewed annually and revised, if necessary, based on “lessons learned” and/or other measures of effectiveness.

Quality and Quantity of Information

One of the questions the legislature asked is whether the Cal/EPA EMS Pilot Projects provided greater quality and quantity of information to the public than otherwise required by regulatory agencies. Data about the pilot projects' information sharing practices was gathered through the Cal/EPA Supplemental Protocols, available at www.calepa.ca.gov/EMS, at the Cal/EPA Working Group meetings, and through information provided to Cal/EPA.

Findings

- Each of the pilot projects provides their EMS environmental policy statement to the public, as required by ISO 14001. Most of the pilot projects provide other information about their EMS, including environmental impacts, objectives and targets, compliance information, hazardous waste generation data, and solid waste generation data.
- All the pilots share EMS information with the Cal/EPA Working Groups. Some EMS information is also typically provided via the company's website.
- In addition to regulatory required information, the pilots share EMS related information with the public, as well as a variety of other environmentally related information.
- All of the pilots with completed EMSs agreed that the EMS has improved the way they communicate with the public or public agencies on environmental issues.
- Several of the pilots reported that participation in Cal/EPA EMS Working Groups, and other community forums, improved their EMSs. They came to view stakeholder participation as beneficial to the environment and their organization.

Each of the pilot projects makes their EMS environmental policy statement available to the public. Most of the pilot projects provide other information about their EMS as well, including environmental impacts, objectives and targets, compliance information, hazardous waste generation data, and solid waste generation data. Several share air emission data, water discharge data, and resource consumption data (e.g., energy, water, and raw materials). Many of the pilots provide environmental aspects as well. Two of the pilots provide operations and procedures information. In addition, one company shares information about pollution prevention projects, community outreach programs, awards, and communication techniques, while another shares information about employee well being/safety in the workplace, remediation activities, and specific information provided in awards applications or as a result of a technical presentation.

All the pilots share EMS information with the Cal/EPA Working Groups. Some EMS information is also typically provided via the company's website. Some of the larger companies also share information through their public relations department and annual report, and others through their newsletter. Other mechanisms for sharing information

include environmental health and safety report brochures, technical journals, annual community stakeholder meetings and upon request.

Pilots are required by regulation to provide a variety of information to regulatory agencies, including

- hazardous waste generation and disposal,
- Toxic Release Inventory (TRI),
- emission factors report,
- Hazardous Waste Source Reduction and Management Review Act of 1989 (SB 14) information on pollution prevention,
- hazardous materials disclosure,
- emergency response plan,
- wastewater sampling information, and
- volatile organic compound (VOC) emissions.

Other information is required to be shared with the public, such as Proposition 65 postings, hazardous materials storage permit information, annual water quality reports, federal emergency response planning and Community Right to Know. For pilots who are public agencies, all records are public documents.

In addition to regulatory required information, the pilots make available EMS related information to the public, as well as information about environmental partnerships, natural resource use, awards, stakeholder involvement, toxic chemical release and VOC emission data, solid waste data, pollution prevention projects, community outreach programs, environmental technology, and safety and health programs.

The pilots agreed that the EMS has changed the way they communicate with the public or public agencies on environmental issues. Specifically,

- IBM: “(Our) EMS has lent additional credibility to the site and activities, strengthening working relationships with community and agency representatives, and supporting efforts to be viewed as an environmental leader.”
- A-BI: “(Having an EMS) helped move the company to more substantial reporting of information and data. Rarely communicated anything except public relations type information in early 1990s. Now communicate as much as possible and explain performance – both good and bad.”
- San Diego: “(We’re) now working in a proactive manner for external communication, sharing EMS successes and challenges with other agencies, companies and interested parties as well as upgrading the external website information to include EMS specifics.”
- Artistic Plating: “(We are now) more comfortable in being more open with the public and public agencies. (Our) impression is that both the public and public agencies are more willing to acknowledge environmental deficiencies and work

toward correcting them. In addition, the public and public agencies are interested in enhancing or expanding on the strengths identified in the EMS.”

- LM Aero-Palmdale: “Prior to EMS (implementation), (we had) no external communication with interested parties other than required regulatory agency communication. “
- Pentel: “As a result of the EMS, Pentel invites representatives of regulatory agencies to inspect facilities and help in improving environmental performance.”

Several of the pilots believed participation in Cal/EPA EMS Working Groups, and other community forums, affected their EMSs and the way they viewed stakeholder participation. Specifically,

- IBM: “No changes. “
- San Diego: “Participation in Working Groups has provided an outstanding opportunity for networking as well as sharing ideas and providing an opportunity to benchmark with other facilities as they continually improve (their) EMS.”
- Artistic Plating: “(It’s) encouraging to share information with stakeholders because EMSs are such a new concept. Sharing information with the public has influenced Artistic’s management to want to be a leader or steward of the environment, to implement its EMS fully and to make the commitment to continue. Artistic has discovered that the more stakeholders are engaged, the better Artistic understands its own EMS program. Feedback, suggestions from Working Groups have been helpful. Also, visiting other facilities in the Cal/EPA EMS Project has helped understand what else could be done and enriches everyone.”
- LM-Aero Palmdale: “Community stakeholder meetings have provided valuable insights into community environmental concerns.”
- Pentel: “(The) Cal/EPA EMS Working Group has been beneficial, particularly as an information exchange vehicle, but has not really changed the way stakeholder participation is viewed since it was as a result of the existing view that participation in the Working Group was initiated in the first place. “

In conclusion, it is clear that greater quality and quantity of information is available to the public through an EMS. All the pilots share EMS information with the Cal/EPA Working Groups. In addition to regulatory required information, the pilots generally share EMS related information with the public, as well as a variety of other environmentally related information. The pilots agreed that the EMS has changed the way they communicate with the public or public agencies on environmental issues. The pilots largely believed participation in Cal/EPA EMS Working Groups, and other community forums, affected their EMSs and the way they viewed stakeholder participation.

For more information, visit these pilot project websites:

IBM: www.ibm.com/ibm/environmental/annual/

ABI: www.abenvironment.com/docs/perform

SD: <http://www.sannet.gov/mwwd/innovations/index.shtml>

AP: www.artisticplating.com

LM: www.lmaeronautics.com/palmdale/esh/index.html

Conclusions

Conclusions presented in this report focus primarily on those issues raised by AB 1102 (Public Resources Code, Section 71045 et seq.) As knowledge on additional issues was gained, either from the pilot projects or the extensive stakeholder discussions, some conclusions beyond the scope of AB 1102 are presented.

1. Where data was available, compliance with existing regulatory standards increased significantly for those organizations implementing an EMS.
2. All organizations with established EMSs demonstrated environmental performance significantly beyond that required by any “permit, requirement, authorization, standard, certification, or other approval issued by a federal, state, regional, or local agency” (legal requirement). Performance beyond legal requirements was demonstrated in several specific areas regulated by law. Such performance is attributable, at least in part, to the development and implementation of the EMS, and not to the applicable legal requirement.
3. Significant performance improvements were demonstrated in environmental areas for which there are no legal requirements. Such areas include energy consumption, solid waste generation, and fresh water use. These performance improvements represent significant potential for environmental benefit and they are not driven by legal requirements.
4. Compliance and general environmental performance improvements can be directly related to two principal factors:
 - a. Design and implementation of a comprehensive, integrated management system of policies, pollution prevention, training, assessment, and continual improvement.
 - b. The establishment of clear, measurable objectives to drive performance.
5. Information quantity and quality available to the public increased substantially both as a result of EMS development and implementation. This result can be attributed to existence of information about the broad range of environmental impacts and resource use, management strategies and performance measures that only existed because there was an EMS. This information, which is noted in the Information Results above, was not shared with the public as a result of any

legal requirement. Community stakeholders have indicated that this supplemental information is of high value.

6. Management systems developed without external input from government, community representatives, and other stakeholders tend to be focused on compliance management and internal business needs. Management systems developed and deployed with participation of government and other external stakeholders have a much greater focus on general environmental performance in addition to compliance. Performance objectives can be significantly influenced by government and other external stakeholders. As a result, participation by government and external stakeholders results in an EMS with greater community and public value.
7. Working partnerships between government, communities, and business do not develop spontaneously, but must be promoted, nurtured, and supported with training, facilitation, and in some cases, financial support.
8. Companies enter into working partnerships with government and communities for a variety of reasons. Such reasons include:
 - a. Business benefits which accrue from good, positive community relations.
 - b. An avoidance of costly, often legal, confrontation with government and communities that result from either poor management or poor communication.
 - c. Recognition by several companies in the pilot group of the importance of the business' social contract with the community to future economic success.
 - d. A vision that at some future time, there will be refinements to the environmental regulatory system with the objective of making that system more efficient and effective in achieving desired environmental outcomes. Also, the recognition that building good relationships with communities and government will afford these companies with a better opportunity to influence such refinements, if or when they occur.
9. Reasons that did NOT motivate companies to join pilot projects.
 - a. Expectation of regulatory concessions, either in standards of performance or quality of information reported.
 - b. Expectation of reduced oversight by regulatory agencies.
 - c. Expectation that regulatory agencies would not increase oversight of companies as a result of their participation in the pilot projects.
10. Larger, more technically sophisticated firms, with greater financial resources, can develop EMSs without government and/or community support, however as stated above, such internally developed EMSs have less focus on the broader environmental, public health, community, and regional issues. Firms with more limited technical and financial resources may require significant assistance in the form of training, consultation, and direction in the development and deployment

of an EMS that benefits the public.

11. Government best functions as a convener, facilitator, and leader of communities and business in the promotion of environmental excellence goals and practice.

Recommendations

The learning from California projects, as well as from other states and countries, establishes the importance of setting specific and measurable goals and targets for environmental improvement. Statewide, regional or business sector goals and targets can help align the efforts of individual companies, regional partnerships and government agencies to achieve significant environmental improvements. As a result:

- **It is recommended that further demonstration (pilot) projects be established with individual companies, in business sectors with substantial environmental impact, to develop EMSs which include specific, measurable targets for environmental performance which goes significantly beyond legal requirements and current performance.**
- **It is recommended that Cal/EPA identify business sectors or regions with significant environmental impact, with which partnerships can be formed to improve environmental performance through the integrated application of EMSs, pollution prevention, multi-media inspection, enforcement and recognition.**
- **It is recommended that a broad outreach and dialogue be initiated, to engage the opinion leaders and the public as to what California's long-term environmental sustainability and resource conservation goals should be.**

If the regulatory system is to be optimized for performance and improved environmental outcomes, the permit system, as the central element of the system, must be evaluated for enhancement. If enhanced environmental outcomes are the primary objective of the regulatory system, and if integrated cross-media management of the environment produces better outcomes, then the permit system should reflect this. Such a system will require legislation, however work should be initiated to determine the basic characteristics of such a system, which would inform the legislative development process. This enhanced permit system would likely function within a supplemental regulatory track for entities which have demonstrated the willingness and ability to implement robust management systems which have achieved superior results.

- **It is recommended that a project be initiated, with broad legislative, stakeholder and public input, to design and test a truly multi-media, systems based, outcome-focused permit system.**

Cal/EPA will have difficulty being seen as a leader in cross-media, systems management, and enhanced environmental performance, unless it implements such an approach internally.

- **It is recommended that Cal/EPA set a goal to become a truly green government agency through the design and implementation of a Cal/EPA EMS, which sets aggressive performance targets in significant environmental and resource conservation areas.**

Recognition of environmental performance excellence is valued by businesses, as public recognition for green production can add value to product (e.g. wines produced from organically grown grapes).

- **It is recommended that a systematic process to evaluate and recognize truly excellent environmental and resource conserving companies and government agencies be established.**

Appendices

Pilot Project Environmental Policies

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Anheuser-Busch, Fairfield

Anheuser-Busch will uphold its position as a global leader by promoting environmental, health, and safety excellence. Through management leadership and employee involvement, Anheuser-Busch pledges to:

Employees

- Create a safe and healthy workplace
- Build a respect for the environment
- Conform to the spirit as well as the letter of applicable laws and regulations and to the company's EHS Requirements
- Set EHS goals and objectives and measure progress toward them
- Integrate EHS considerations into business planning, decision making, and daily activities
- Provide the resources and training to carry out this policy

Community

- Prevent accidents and minimize environmental impacts
- Communicate our EHS performance
- Respond to our neighbors' concerns
- Support EHS public policy development
- Support wildlife and habitat conservation efforts
- Conserve resources and minimize waste by reducing, reusing, and recycling

Contractors/Suppliers/Customers

- Encourage, support, and recognize EHS innovations
- Assist in the integration of EHS excellence into products and services
- Exchange EHS knowledge and technology

Shareholders

- Increase shareholder value through EHS excellence

This commitment builds on our tradition of quality, innovation, continuous improvement, and responsible conduct. Each employee will comply with this policy — neither production goals nor financial objectives shall excuse noncompliance.

Anheuser-Busch products are brewed to be enjoyed responsibly by adults.

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Central Marin Sanitation Agency, San Rafael
Environmental Policy
DRAFT
[Rev 10/15/99]

CMSA is committed to promoting a healthy environment. We shall strive to optimize our treatment and re-use processes while minimizing the adverse environmental impacts resulting from our activities.

Commitments

- To comply fully with the letter and spirit of relevant environmental laws and regulations. There shall be thorough and accurate measurement and reporting of our environmental compliance.
- Prevention of pollution. This shall mean avoiding or reducing environmental pollution produced directly from CMSA operations. It shall also mean avoiding or reducing pollution produced indirectly by the consumption of power, fuel, chemicals, and other resources by CMSA.
- To continually improve our performance relevant to this environmental policy.
- To foster openness and dialogue with employees and the public, anticipating and responding to their concerns about potential hazards and impacts of our operations.

City of San Diego Metropolitan Wastewater Department,
Operations and Maintenance Division

Environmental Policy

The Operations and Maintenance (O&M) Division of the City of San Diego Metropolitan Wastewater Department is committed to providing reliable, high-quality, and cost-effective wastewater services to the ratepayers of the City of San Diego, as well as to preserve and protect the welfare of the public and the marine and coastal environment in a responsible and proactive manner. In fulfillment of this commitment, it is O&M Division policy to:

- Establish and maintain an Environmental Management System that provides a framework for setting and periodically reviewing the O&M Division's environmental objectives and targets for each of its major facilities;
- Continually improve the Division's environmental practices;
- Comply with O&M Division's regulatory requirements, legal, and other industry standards to which we subscribe; and,
- Prevent environmental pollution that may be attributable to O&M Division operations and otherwise seek to minimize waste.

This policy is communicated regularly to all O&M Division staff and will be made available to regulatory agencies, the public, or other interested parties upon request.

Director, MWWD

Assistant Director, MWWD

Deputy Director, O&M Division
Chair, Environmental Management
Review Board

Environmental Management
Representative, O&M Division

IBM Corporation, San Jose

IBM Policy Letter Number: 139B

Date: July 29, 1997

Subject: Environmental Affairs

IBM is committed to environmental affairs leadership in all of its business activities. IBM has had longstanding corporate policies of providing a safe and healthful workplace, protecting the environment, and conserving energy and natural resources, which were formalized in 1967, 1971 and 1974 respectively. They have served the environment and our business well over the years and provide the foundation for the following corporate policy objectives:

- Provide a safe and healthful workplace and ensure that personnel are properly trained and have appropriate safety and emergency equipment.
- Be an environmentally responsible neighbor in the communities where we operate, and act promptly and responsibly to correct incidents or conditions that endanger health, safety, or the environment. Report them to authorities promptly and inform affected parties as appropriate.
- Conserve natural resources by reusing and recycling materials, purchasing recycled materials, and using recyclable packaging and other materials.
- Develop, manufacture, and market products that are safe for their intended use, efficient in their use of energy, protective of the environment, and that can be reused, recycled or disposed of safely.
- Use development and manufacturing processes that do not adversely affect the environment, including developing and improving operations and technologies to minimize waste, prevent air, water, and other pollution, minimize health and safety risks, and dispose of waste safely and responsibly.
- Ensure the responsible use of energy throughout our business, including conserving energy, improving energy efficiency, and giving preference to renewable over nonrenewable energy sources when feasible.
- Participate in efforts to improve environmental protection and understanding around the world and share appropriate pollution prevention technology, knowledge and methods.
- Utilize IBM products, services and expertise around the world to assist in the development of solutions to environmental problems.
- Meet or exceed all applicable government requirements and voluntary requirements to which IBM subscribes. Set and adhere to stringent requirements of our own no matter where in the world the company does business.
- Strive to continually improve IBM's environmental management system and performance, and periodically issue progress reports to the general public.

- Conduct rigorous audits and self-assessments of IBM's compliance with this policy, measure progress of IBM's environmental affairs performance, and report periodically to the Board of Directors.

Every employee and every contractor on IBM premises is expected to follow this policy and to report any environmental, health, or safety concern to IBM management. Managers are expected to take prompt action.

Original signed by: Louis V. Gerstner, Jr.

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Lockheed Martin Aeronautics Company, Palmdale

LM Aero Company Policy: Environment, Safety and Health (ESH)

Purpose

To document company policy regarding safe and healthy working conditions, protecting the environment and conserving natural resources.

Policy

Responsibility for ESH is everybody's business!

Lockheed Martin Aeronautics Company protects employees, customers, contractors, communities, visitors, and the environment from the hazards of Company activities, products or services. We:

- Prevent pollution, conserve resources, reduce waste, and recover or recycle resources where economically feasible.
- Maintain a safe and healthy workplace to prevent injuries and illnesses.
- Comply with applicable laws and regulations, and satisfy corporate and customer requirements.
- Minimize significant adverse ESH impacts by integrating ESH management practices into business decisions.
- Integrate ESH management practices into design processes to minimize adverse ESH impacts throughout production, use, and disposal of products.
- Integrate ESH management practices into procurement and property renovation, rearrangement, acquisition, consolidation and divestiture.
- Develop ESH performance objectives and targets to ensure continual improvement of the Environment, Safety and Health Management System (ESHMS) and reduce adverse ESH impacts.
- Respond to employee, community, customer, and regulatory agency concerns regarding potential adverse EHS impacts due to LM Aero activities, products or services.
- Establish pro-active partnerships with regulatory agencies, customers, and suppliers to improve ESH performance and compliance cost effectiveness.
- Provide people, specialized skills, technology, training, and budget to maintain an integrated ESHMS.
- Maintain ESH requirement awareness throughout the workforce and execute tasks using safe, healthy, and environmentally sound work practices.

Company Roles and Responsibilities

- A. Senior Management establishes ESH objectives and reviews Company ESH performance.
- B. People & Organization Services develops and administers the ESHMS.
- C. Function and staff organizations define processes to communicate and implement ESH policy.
- D. Programs use the defined ESH processes.

Artistic Plating and Metal Finishing, Inc., Anaheim

Statement of Environmental Policy

Artistic is committed to a responsible and continually improving environmental management system. This commitment is broad in approach. Primarily, it encompasses full compliance with all applicable federal, state, and local safety and health and environmental regulations. Secondly, it includes the proper utilization of best management practices and best available control technologies for the prevention of pollution and reduction of waste from production operations. Thirdly, it seeks to maximize the effectiveness of its environmental management system by actively involving its most valuable resource.... its EMPLOYEES. The latter will be accomplished by providing them appropriate training and by enhancing their awareness and roll they play in safety and environmental issues at work and in society.

This commitment is fundamental to Artistic's company culture. It is a commitment we expect our employees, customers, community, and vendors to understand and support. Our commitment to a safe, healthy work place and clean environment around our facility will lead to long-term success through improved productivity and recognition as an industry leader. We will further implement this policy through the following ongoing actions:

- We will establish a structured, rigorous, fact-based process for defining, prioritizing, and improving the EMS.
- We will maintain a continuous process of evaluating our safety and environmental performance.
- We will seek ways to more efficiently use, in our production operations, all of the available resources and process materials.
- We will seek to continually improve our quality control standards to increase customer satisfaction and reduce waste of valuable resources.
- We will promote new ideas and teamwork to expand upon the goals of our EMS.
- We will strive to establish an environment of trust and confidence with the community within which we operate.
- We will disseminate our environmental policy throughout the facility and encourage our employees to fully adhere to it. Also, this policy will be available to the general public.

Kipton Kahler

President

Pentel of America, Ltd. in Torrance
Environmental Policy

Here at the Pentel of America, Ltd. Torrance Factory, every employee is responsible for the environment, following all environmental laws, regulations, and any Company requirements created to strengthen existing laws and regulations in protecting people and the environment.

The employees of the Torrance Factory are committed to continual environmental improvement, and each employee participates in:

- Preventing pollution
- Reducing waste and decreasing electricity, gas and water usage
- Recycling and re-using material
- Assuring that supplies, materials, and products are environmentally friendly
- Preparing for the possibility of an environmental emergency

This policy is communicated to all employees. A copy of it will be made available to anyone upon request. Scheduled audits, training, and other activities are carried out to assure that the policy is understood and followed. It is kept up to date with changing conditions and information through periodic management reviews.

H. Sugimatsu
Vice President of Manufacturing

Davis Bynum Winery, Sonoma County
Environmental Policy

Our goal regarding the environment as it relates to our vineyards and winery business is to create a symbiotic, sustainable relationship that minimizes the negative impacts and increases the positive impacts. To this end we shall:

- be aware of significant environmental impacts of all aspects of the operation within our control.
- find new ways to minimize our dependency on non-renewable energy as well as natural resources.
- continually minimize our export of solid waste.
- continue our commitment to organic growing methods.
- reward customers and suppliers we work with that make an effort to adhere to similar environmental goals.
- make ourselves as transparent as possible to stakeholders and have facilities for stakeholder feedback.
- keep abreast of all current environmental laws and regulations to facilitate our compliance.
- pursue the goal of no harm to people and the prevention of pollution.
- educated all employees to what this policy entails and the policy will also be available to the public.

Benziger Family Winery, Sonoma County
Environmental Policy

Benziger Family Winery is committed to identifying and promoting the most environmentally safe and sustainable business and farming practices.

We believe that sound environmental policy will lead to an increase in product quality as well as the social well being of our employees and community.

We will:

- Continually monitor and improve environmental performance through and EMS.
- Appoint an environmental committee to propose annual targets and objectives for management approval.
- Integrate environmental consideration across all business functions, (vineyard, winemaking, purchasing, etc.).
- Comply fully with the letter and spirit of environmental laws and regulations.
- Seek to prevent pollution before it is produced and reduce the amount of waste at our facilities.
- Recycle whenever possible and use environmentally preferred materials.
- Communicate this policy throughout the company and provide appropriate training and educate employees to be environmentally responsible on the job and at home.
- Manage our natural resources in an environmentally sensitive manner and use energy efficiently throughout our operations.
- Continuously work to improve our adherence to these principals and report to our stakeholders.
- Make this policy available to our customers, community members and the general public.

Public Resources Code 71045 (Assembly Bill 1102)

BILL NUMBER: AB 1102 CHAPTERED
BILL TEXT
CHAPTER 65
FILED WITH SECRETARY OF STATE JULY 6, 1999
APPROVED BY GOVERNOR JULY 6, 1999
PASSED THE ASSEMBLY JUNE 16, 1999
PASSED THE SENATE JUNE 15, 1999
AMENDED IN SENATE JUNE 15, 1999

INTRODUCED BY Assembly Members Jackson, Nakano, Correa, and Reyes and Senator Sher

FEBRUARY 25, 1999

An act to add Sections 12812.2 and 12812.3 to the Government Code to add Part 1.5 (commencing with Section 71040) to Division 34 of, and to add and repeal Part 1.6 (commencing with Section 71045) of Division 34 of, the Public Resources Code, relating to environmental protection.

LEGISLATIVE COUNSEL'S DIGEST

AB 1102, Jackson. Environmental protection.

(1) Existing law authorizes the Governor, with respect to the California Environmental Protection Agency, to appoint not more than 3 deputies to the Secretary for Environmental Protection.

This bill would provide that one of those deputies shall be a deputy secretary for law enforcement and counsel and another deputy shall be a deputy secretary for external affairs. The bill would prescribe the duties and responsibilities of those deputies.

(2) Existing law requires a business or entity to obtain various environmental permits prior to undertaking any project that may have an impact on the environment.

This bill would require the secretary to establish permit assistance centers throughout the state to provide businesses and other entities with assistance in complying with the laws and regulations implemented by the boards, departments, and offices within the agency. The bill would also require the secretary to establish an electronic on-line permit assistance center, known as the "California Government-On Line to Desktops" (CALGOLD) program, to be available through the Internet to provide a business or entity with assistance in complying with those laws and regulations.

The bill would also require the secretary to establish no more than 8 pilot projects for the purpose of evaluating whether and how the use of an environmental management system, as defined in the bill, increases, among other things, public health and environmental protection, over the protections provided through the issuance, enforcement, and monitoring of any permit, requirement, authorization, standard, certification, or other approval issued by a federal, state, regional, or local agency for those purposes. The bill would authorize the secretary to develop evaluation and monitoring parameters for the evaluation and to develop a model memorandum of understanding to be entered into by the secretary and any regulated entity that agrees to participate in a pilot project.

Under the bill, the secretary would be required to submit quarterly reports to the Governor and the Legislature on the status of the pilot projects. The bill would provide for the repeal of the latter provisions on January 1, 2002.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 12812.2 is added to the Government Code, to read:

12812.2. (a) One of the deputies to the Secretary for Environmental Protection authorized pursuant to Section 12812.1 shall be a deputy secretary for law enforcement and counsel, who, subject to the direction and supervision of the secretary, shall have the responsibility and authority to do all of the following:

(1) Develop a program to ensure that the boards, departments, offices, and other agencies that implement laws or regulations within the jurisdiction of the California Environmental Protection Agency take consistent, effective, and coordinated compliance and enforcement actions to protect public health and the environment. The program shall include training and cross-training of inspection and enforcement personnel of those boards, departments, offices, or other agencies to ensure consistent, effective, and coordinated enforcement.

(2) In consultation with the Attorney General, establish a cross-media enforcement unit to assist a board, department, office, or other agency that implements a law or regulation within the jurisdiction of the California Environmental Protection Agency, to investigate and prepare matters for enforcement action in order to protect public health and the environment. The unit may inspect and investigate a violation of a law or regulation within the jurisdiction of such board, department, office, or other agency, including a violation involving more than one environmental medium and a violation involving the jurisdiction of more than one such board, department, office, or agency. The unit shall exercise its authority consistent with the authority granted to the head of a department pursuant to Article 2 (commencing with Section 11180) of Chapter 2 of Part 1.

(3) Refer a violation of a law or regulation within the jurisdiction of a board, department, office, or other agency that implements a law or regulation within the jurisdiction of the California Environmental Protection Agency to the Attorney General, a district attorney, or city attorney for the filing of a civil or criminal action.

(4) Exercise the authority granted pursuant to paragraph (3) only after providing notice to the board, department, office, or other agency unless the secretary determines that notice would compromise an investigation or enforcement action.

(b) Nothing in this section shall authorize the deputy secretary for law enforcement and counsel to duplicate, overlap, compromise, or otherwise interfere with an investigation or enforcement action undertaken by a board, department, office, or other agency that implements a law or regulation subject to the jurisdiction of the California Environmental Protection Agency.

(c) Notwithstanding Section 7550.5 of the Government Code, the Secretary for Environmental Protection shall report annually to the Governor and the Legislature on the implementation of this section.

SEC. 2. Section 12812.3 is added to the Government Code, to read: 12812.3. One of the deputies to the Secretary for Environmental Protection authorized pursuant to Section 12812.1 shall be a deputy secretary for external affairs who shall provide public outreach, communication to individuals and communities impacted by permitted activities, and technical support to businesses subject to regulation by one or more boards, departments, or offices within the California Environmental Protection Agency.

SEC. 3. Part 1.5 (commencing with Section 71040) is added to Division 34 of the Public Resources Code, to read:

PART 1.5. PERMIT ASSISTANCE CENTERS

71040. (a) The Secretary for Environmental Protection shall establish permit assistance centers throughout the state to provide businesses and other entities with assistance in complying with laws and regulations implemented by every board, department, and office within the California Environmental Protection Agency. Each permit assistance center shall, to the extent feasible, incorporate permit assistance activities of local and federal entities and of other entities of the state into its operations.

(b) In addition to the centers authorized pursuant to subdivision (a), the secretary shall establish an electronic on-line permit assistance center through the Internet. The electronic on-line permit assistance center shall be available for use by any business or other entity subject to a law or regulation implemented by a board, department, or office within the California Environmental Protection Agency, and shall provide a business or other entity with assistance in complying with those laws and regulations. The center, which shall be called the "California Government-On Line to Desktops" or "CALGOLD" program, shall provide special software, "hotlinks" and other on-line resources and tools that may be used by a business or other entity to streamline and expedite compliance with laws and regulations implemented by a board, department, or office within the California Environmental Protection Agency. The CALGOLD program shall, to the extent feasible, incorporate permit assistance activities of local and federal entities and of other entities of the state into its operations.

(c) Notwithstanding Section 7550.5 of the Government Code, the Secretary for Environmental Protection shall report annually to the Governor and the Legislature on the number of permits issued, expedited, or otherwise streamlined by each center; the number and types of businesses assisted by each center; and how the assistance provided to businesses has improved environmental protection. The secretary, in consultation with the Secretary of the Trade and Commerce Agency, shall report on the permit assistance activities of both agencies and shall make recommendations to ensure that these activities are coordinated and non-duplicative.

SEC. 4. Part 1.6 (commencing with Section 71045) is added to Division 34 of the Public Resources Code, to read:

PART 1.6. ENVIRONMENTAL MANAGEMENT SYSTEMS

71045. For the purposes of this chapter, the following definitions shall apply:

(a) "Environmental management system" means a system of standards or guidelines for the management of the activities or processes of a regulated entity that meets all of the following criteria:

- (1) The system is voluntary on the part of the regulated entity.
- (2) The system is in addition to, and not in lieu of, any permit requirement, authorization, standard, certification, or other approval issued by a federal, state, regional, or local agency.
- (3) The system results in public health or environmental benefits that exceed any benefits that may be otherwise obtained through compliance with any permit, requirement, authorization, standard, certification, or other approval issued by a federal, state, regional, or local agency for the protection of public health or the environment, including, but not limited to, pollution prevention, reduction in energy consumption, reduction in water consumption, reduced risk to workers, and reduction in solid or hazardous waste, generated or disposed.
- (4) The system results in increased quantity and quality of information available to the public on the environmental effects of the activities or processes of a regulated entity when compared to that information available to the public through compliance with any permit, requirement, authorization, standard, certification, or other approval issued by a federal, state, regional, or local agency for the protection of public health or the environment, or any other law or regulation governing public disclosure of information.

(b) "Regulated entity" means a business, public agency, or other entity subject to regulation by one or more boards, departments, or offices within the California Environmental Protection Agency.

(c) "Secretary" means the Secretary for Environmental Protection.

71046. (a) The secretary, in consultation with the boards, offices, and departments within the California Environmental Protection Agency, other interested state, regional, and local agencies, and any other interested party, and after holding at least one public hearing for the purposes of obtaining public comment on the pilot projects proposed to be selected, shall establish no more than eight pilot projects for the purpose of evaluating both of the following:

- (1) Whether and how the use of an environmental management system by a regulated entity that participates in a pilot project increases public health and environmental protection over those protections provided through the issuance, enforcement, and monitoring of any permit, requirement, authorization, standard, certification, or other approval issued by a federal, state, regional, or local agency to the regulated entity for the protection of public health or the environment.
- (2) Whether and how the use of an environmental management system by a regulated entity that participates in a pilot project provides the public with greater information on the nature and extent of the public health or environmental effects of activities or processes engaged in by the regulated entity than that information provided through the issuance, enforcement, and monitoring of any permit, requirement, authorization, standard, certification, or other approval issued to the regulated entity by a federal, state, regional, or local agency for the protection of public health or the environment, or any other law or regulation governing the disclosure of public information.

(b) The secretary may develop evaluation and monitoring parameters for the purpose of making the evaluation required under subdivision (a) and may develop a model memorandum of understanding to be

entered into by the secretary and any regulated entity that agrees to participate in a pilot project authorized pursuant to this section.

The notice of the parameters and model memorandum of understanding shall be given to the public in draft form at least 30 days prior to adoption, and shall be subject to at least one public hearing, prior to adoption, for the purpose of obtaining public comment.

(c) The secretary may enter into a memorandum of understanding with a regulated entity that voluntarily chooses to participate in a pilot project if both of the following conditions are met:

(1) The environmental management system used by the regulated entity can reasonably be expected to produce greater public health and environmental protection than would otherwise be achieved through the permits, requirements, authorizations, standards, approvals, or certifications issued by a federal, state, regional, or local agency.

(2) The environmental management system used by the regulated entity can be monitored to allow the secretary to perform the evaluation required under subdivision (a).

(d) Notwithstanding Section 7550.5 of the Government Code, beginning January 1, 2000, the secretary shall submit quarterly reports to the Governor and the Legislature on the status of the implementation of this section.

(e) Nothing in this section shall be construed as limiting, abridging, or otherwise waiving any permit, requirement, authorization, standard, certification, or other approval issued by a federal, state, regional, or local agency pursuant to law or regulation for the protection of public health or the environment.

71047. This part shall remain in effect only until January 1, 2002, and as of that date is repealed, unless a later enacted statute, which is enacted before January 1, 2002, deletes or extends that date.

SEC. 5. The Legislature finds and declares that Sections 1 and 2 of this act are intended to establish in statute the authority and duties of the positions of deputy secretary for law enforcement and counsel and deputy secretary for external affairs, as created under the Governor's Reorganization Plan No. 1 of 1991, which established the California Environmental Protection Agency. It is the intent of the Legislature that any funding provided in the annual Budget Act for those positions shall be used to implement Sections 12812.2 and 12812.3 of the Government Code.

SEC. 6. The Legislature finds and declares that Section 3 of this act is intended to establish in statute the duties and responsibilities of the Secretary for Environmental Protection with regard to establishing the permit assistance centers funded by the Budget Act of 1999. It is the intent of the Legislature to ensure future stable and predictable funding for the centers.

SEC. 7. It is the intent of the Legislature in enacting Section 4 of this act to establish the criteria under which funds appropriated in the Budget Act of 1999 to the Secretary of Environmental Protection may be expended for environmental management system pilot projects.